

Martin Cenek

Associate Professor of Computer Science
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Education:

Doctor of Philosophy in Computer Science, Portland State University, Portland, OR. 2007 -2011

Advisor: Dr. Melanie Mitchell. Degree Awarded: July 2011

Dissertation: Information Processing in Two-Dimensional Cellular Automata.

Master of Science in Computer Science, Portland State University, Portland, OR. 2002-2004

Bachelor of Science in Computer Science, Portland State University, Portland, OR. 2000-2002

Lower Columbia College, Longview, WA. 1997-1999

University of Transport and Communications, Department of Mechanical Engineering, Zilina, Slovak Republic. 1993-1996

Appointments:

University of Portland, Portland OR. Associate Professor. Computer Science Department. August 2018 – present

University of Alaska Anchorage, Anchorage AK. Assistant Professor. Department of Computer science and Engineering. August 2012 – August 2018

University Of Idaho, Moscow ID. Instructor. Social Ecological Systems Training and Education Program (SESTEP). October 2016 – April 2017

Portland State University, Portland OR. Adjunct Instructor. Department of Computer Science. 2005-2007

Current Research:

University of Portland.

Intelligent Cyber-Physical Systems:

Per Capita Water and Fixture Use in Rural Alaska.

Intelligent Curbside Recycling: Composition and Contamination Analysis with Intelligence Robotics and Artificial Intelligence.

Previous Research:

University of Alaska Anchorage.

- **Understanding the coupled systems dynamics between social and environmental systems in Southeast Alaska.** Funding: Alaska NSF EPSCoR
Collaborators and Research Assistants: 20+ collaborators UA system, Alaska Department of Fish and Game, University of Idaho, 9 UG research assistants, 1 MS Student. September 2014 – 2018.
- **Massively parallel, asynchronous, decentralized, locally connected networks of simple power-aware sensor networks for environmental sensing in the Arctic regions.** Funding: Arctic Domain Awareness Center, Department of Homeland Security
Collaborators and Research Assistants: Drs. Kenrick Mock, Aaron Dotson. United States Coast Guard, 5 UG research assistants August 2015 – 2017.
- **Robust anomaly detection with control feedback for irrigation canals for reconstruction efforts in Afghanistan.** Funding: Afghanistan Reconstruction Trust Fund, World Bank Group. International Relief and Development (IRD).

Collaborators and Research Assistants: Dr. Aaron Dotson, Dr. Caixia Wang, Dr. Kenrick Mock, Matthew Devins. February 2014 – June 2015.

- **Brain-Wave Based Authentication in Noisy and Distractive Environments.**
- **Neuromorphic Implementation of Human Inspired Computer Vision System for Object Recognition in Surveillance Video.**
- **Web Yup'ik-ization.**

Graduate Research Assistant: Portland State University

- **Information Processing in Two-Dimensional Cellular Automata. Funding: MARCO/FENA.**
- **Evolutionary Computations Using Reconstructability Analysis. Funding: NSF.**
- **Multiple Objective Optimization. Funding: Intel/NSF.**
- **Project: Applied Robotics – Remotely Controlled Observatory.**

Grants and Funding:

Current and Pending:

- **Per Capita Water and Fixture Use in Rural Alaska.** Alaska Department of Environmental Conservation. PI: Dotson, A., Co-PI: Cenek, M. \$265,250 (Awarded. Execution 2018-2020)
- **Intelligent Curbside Recycling: Composition and Contamination Analysis with Intelligence Robotics and Artificial Intelligence.** Katherine Bisbee II Fund of the Oregon Community Foundation. PI: Cenek. \$10,000 (direct) (Awarded. Execution 2019-2020)
- **Aerial inspection and corrosion detection using computer vision system for Alaska's oil and gas engineered infrastructure.** The ConocoPhillips Arctic Science and Engineering Endowment Award. PI: Cenek, M., Co-PI: Dotson, A., Kellie, B.. \$91,284 (direct) (Awarded. Execution 2018-2019)

Previous:

1. **Characterizing Anchorage's Solid Waste with Techniques of Today and Tomorrow,** Solid Waste Services. MOABU: #0020170857. PI: Dotson, A., co-PI: Cenek, M. 07/27/2017 – 07/27/2018. \$49,000
2. **Coordination, Integration and Synthesis: Integrated modeling.** PI: Cenek, M. NSF EPSCoR Subaward: NSF 0701898. 6/30/2016-6/30/2017 . \$70,960
3. **New Low Cost Wireless Sensors for Arctic Monitoring.** PI: Cenek, M. Center of Excellence - Center for Maritime Research, Department of Homeland Security: UAA Arctic Domain Awareness Center. (G9634). 07/01/2016-06/31/2017. \$79,005.82
4. **ABM 17 Symposium Professional Enhancement Award.** Cenek. San Diego State University. The Complex Human-Environment Systems Group, Department of Geography and NSF (BCS #1638446). 02/24/2017. \$800.
5. **How do we understand simple sentences? EEG based cognition study.** PI: Cenek, M. Co-PI: Ozuru, Y. UAA Complex Systems faculty mini-grant. 04/01/2016-06/31/2016. \$2,000.
6. **New Low Cost Wireless Sensors for Arctic Monitoring.** PI: Cenek, M. Center of Excellence - Center for Maritime Research, Department of Homeland Security: UAA Arctic Domain Awareness Center. (G9634). 07/01/2015-06/31/2016. \$16,257
7. **Coordination, Integration and Synthesis: Integrated modeling.** PI: Cenek, M. NSF EPSCoR Subaward: NSF0701898. 6/30/2015-6/30/2016 . \$79,356
8. **Discovery of Environmental Change in the Kenai Watershed through Immersive Visualization.** PI: Witmer, F co-PIs: Grunblatt, J., Trammell, J., Cenek, M., Anderson, J. Subaward NSF EPSCoR NSF0701898. 09/28/2015-05/28/2016. \$41,792

9. **Understanding the dynamics of Social and Environmental Change in the Alaska's Kenai Peninsula.** PI: Cenek, M. NSF EPSCoR Award: NSF0701898. 7/1/2014-6/30/2015. \$34,882
10. **Visualizing Networks in 3D using the UAA Planetarium and Visualization Theater.** PIs: Cenek, M, Witmer F. NSF EPSCoR (NSF0701898) Seed Grant: 243363-12398. 7/1/2014 – 09/30/2015. \$43,654
11. **New Low Cost Wireless Sensors for Arctic Monitoring.** PI: Cenek, M. Center of Excellence - Center for Maritime Research, Researcher on award Department of Homeland Security: UAA Arctic Domain Awareness Center. (G9634). 5/3/2015-7/11/2015. \$6,200
12. **ANSEP Summer Activity Mini-Grant.** \$11,671.28. Awarded and Executed as a Class Summer 2015. \$8,000
13. **Cloud-based Web Services and Mobile Application in support of Remote Monitoring Systems.** PI. Dotson, A., Wang, C., Cenek, M., Mock K., International Relief and Development (IRD). January 18, 2014. \$50,000
14. **Computer Simulated Modeling of the Ecological Impact of a Population Splitting Event.** Student Grant Supervisor. Dahl, S. UAA Office of Undergraduate Research and Scholarship. \$500
15. **Complex Systems Web Portal Development.** UAA Complex Systems Group. 5/19/2013-6/15/2013. \$5,000

Book Chapters:

Student Co-Authors are underlined

1. **Cenek, M., Franklin, M. Developing High Fidelity, Data Driven, Verified Agent Based Models of Coupled Socio-Ecological Systems of Alaska Fisheries.** In L. Perez et al. (eds.), Agent-Based Models and Complexity Science in the Age of Geospatial Big Data, Advances in Geographic Information Science, DOI 10.1007/978-3-319-65993-0_1. Springer International Publishing AG 2018.
2. **Cenek, M. and Mitchell, M. Evolving Cellular Automata.** In Meyers, R. A. & Adamatzky, A. (ed.) *Encyclopedia of Complexity and System Science.* Springer, Berlin Heidelberg New York, 2009.

Peer Review Publications (includes under review):

1. **Cenek, M., Hu, M., York, G., Dahl, S. Survey of Image Processing Techniques for Brain Pathology Diagnosis: Challenges and Opportunities for Intelligent Robotics.** Frontiers in Robotics. Biomedical Robotics. 02 November 2018, <https://doi.org/10.3389/frobt.2018.00120>
2. **Cenek, M., Franklin, M., Sheaffer, C., Thomas, H. Assessing impact of Arctic climate change and human development scenarios on caribou movements and subsistence hunting at Nuiqsut, Alaska.** Frontiers in Ecology and the Environment. Submitted: 03/28/2018 (internal review)
3. **Cenek, M., Haro, R., Sayers, B., Peng, J. Climate Change and Power Security: Power Load Prediction for Rural Electrical Microgrids Using Long Short Term Memory and Artificial Neural Networks.** Applied Sciences. 2018, 8, 749 DOI: <https://doi.org/10.3390/app8050749>
4. **Cenek, M., Pak, E., Oyster, L., Ching, B. Semantic Network Analysis Pipeline: Computational linguistics framework for semantic flows analysis.** Computational Linguistics. Submitted: 10/25/2017
5. **Cenek, M., Franklin, M., Trammell, E. J., Dahl, S. How will the Kenai fisheries respond to changing environmental conditions: scenario based studies of coupled socio-ecological systems dynamics using an agent-based model.** OCEANS17 MTS/IEEE Conference: Our Harsh and Fragile Ocean. September 18-21, 2017. Anchorage, AK. #170321-002.
6. **Franklin, M., Cenek, M., Trammell, E. J. Forecasting policy implications and understanding adaptive capacity of salmon fisheries experiencing shifting social and ecological drivers at the Kenai River: scenario-based studies with an agent-based model.** Conservation Letters. CONL-17-0263. Submitted: 03/06/2018 (under review)

7. Krupa, M., **Cenek, M.**, Powell, J., Trammell, E. J. **Mapping the Stakeholders: Using social network analysis to increase the legitimacy and transparency of participatory scenario planning.** Society & Natural Resources. Submitted: 19/05/2016 Revised: 04/08/2017. Accepted with minor revisions: 07/31/2017 DOI: <http://dx.doi.org/10.1080/08941920.2017.1376140>
8. **Cenek, M., Franklin, M.** **An adaptable agent-based model for guiding multi-species Pacific salmon fisheries management within a SES framework.** Ecological Modeling (Special Issue). Elsevier. Submitted: 11/18/2016. Revised: 04/01/2017. Published: 06/22/2017. <https://doi.org/10.1016/j.ecolmodel.2017.06.024>
9. Banda, P., Caughman, J., **Cenek, M.**, Teuscher, C. **Irreversibility and Enumeration of Shift-Symmetric Configurations in Two-Dimensional Cellular Automata.** Physical Review E. <https://arxiv.org/abs/1703.09030>. Submitted: 2/21/2017
10. Powell, J, Krupa, **M, Cenek, M,** Show, I. **The Adaptive Capacity of Communities Surrounding Alaska's Kenai River Fisheries: Learning to Navigate Environmental Change.** Society & Natural Resources - Manuscript ID USNR-2017-0005. Submitted: 01/02/2017. (Under Review)
11. **Cenek, M., Franklin, M.** **Developing High Fidelity, Data Driven, Verified Agent Based Models of Coupled Socio-Ecological Systems of Alaska Fisheries.** Brown, D. G., Kim, E.-K., Perez, L., & Sengupta, R. (Eds.) (2016). Proceedings of GIScience 2016 Workshop on Rethinking the ABCs: Agent-Based Models and Complexity Science in the age of Big Data, CyberGIS, and Sensor Networks, Montreal, Canada, September 27, 2016. <https://sites.psu.edu/bigcomplexitygisci/publications/>
12. **Cenek, M., Dahl, S.** **Towards Emergent Design: Analysis, Fitness and Heterogeneity of Agent Based Models Using Geometry of Behavioral Spaces Framework.** Gershenson, C., Froese, T., Siqueiros, J., Aguilar, W., Izquierdo, E.. and Sayama, H. Special Session on Artificial Life and Society. Proceedings of Artificial Life Conference 2016, ALife2016. DOI: 10.7551/978-0-262-33936-0-ch013
13. **Cenek, M., Dahl, S.** **Geometry of the behavioral spaces: A computational approach to analysis and understanding the agent based models and agent behaviors.** Chaos: An Interdisciplinary Journal of Nonlinear Science. *Submitted 12/11/2015. Revised 04/11/2016 Published: 10/06/2016.* DOI: 10.1063/1.4965982
14. al-Zahir, S, **Fatima, Q, Cenek, M.** **New Graph-Based Text Summarization Method.** In proceedings of 2015 IEEE Pacific Rim Conference on Communications, Computers and Signal Processing. August 24-26 2015. Victoria, BC, Canada. DOI: 10.1109/PACRIM.2015.7334869
15. Cenek, M. **Information Processing in Two-Dimensional Cellular Automata.** PhD Thesis. Portland State University, Portland Oregon. 2011.

In preparation

1. Ligmann-Zielinska et al. **Sensitivity Analysis of Agent-Based Models in Social, Human-Environment, and Life Sciences: Methods, Challenges, and Prospects.** Annals of Association of American Geographer. Submission Spring 2018.
2. An et al. **The Usefulness, Uselessness, and Impending Tasks of Agent-Based Models in Social, Human-Environment, and Life Sciences.** Annals of Association of American Geographer. Submission Spring 2018.
3. Cenek, M, Hu, M., Al-Zahir, S., Ozuru, Y., Tee, F. **Brain-Wave Based Authentication in Noisy and Distractive Environments.** *Status: Submission Spring 2018.*
4. Cenek, M, Marques-Pita, M, and Mitchell M. **Evaluation of the Filtering Methods for Two-Dimensional Cellular Automaton.** Physical Review E. *Status: submission Spring 2018.*
5. Cenek, M, Marques-Pita, M, and Mitchell, M. **Automatic Identification of Information-Processing Structures in Cellular Automata.** Journal of Cellular Automata. *Status: Submission Spring 2018.*

6. Cenek, M, Dotson, A. **Robust, data-driven, self-healing water-height anomaly detection for irrigation canals.** *Status: Submission 2018.*
7. Harriss, J, Cenek, M. **Depth Based Algorithm for Main Path Analysis.** *Status: Submission 2018.*

Conferences, Talks, Posters and Presentations:

1. Aggarwal, S., Drew, E., Huang, D., Veazey, P., Prakash, A., Hinzman, L., and all HLFEW 2016 participants. (2018). **The Food-Energy-Water (FEW) Nexus in Islanded Communities and High Latitudes: Issues, Pathways, and Implications (NSF CBET-1622408): Final Report.** Available at <http://www.hlfew16.alaska.edu/HLFEW.pdf>
2. **Agent-based model of the subsistence land-use dynamics of an Arctic community.** Cenek, M., Franklin, M., Sheaffer, C., Thomas, H.T. The International Society for Ecological Modelling Global Conference 2017. JeJu Island, South Korea. September 17-21, 2017. ISEM2017_0135. Talk.
3. **The Geometry of Behavioral Spaces Framework: agent-based model validation.** Cenek, M., Dahl, S., Franklin. The International Society for Ecological Modelling Global Conference 2017. JeJu Island, South Korea. September 17-21, 2017. ISEM2017_0136. Talk and Poster.
4. **Geometry of Behavioral Spaces Framework, validation, sensitivity study, behavioral prototypes, probabilistic behavioral networks.** Cenek, M., Dahl, S., Franklin, M. Agent-Based Modeling (ABM) 17: A Symposium That Advances the Science of ABM. San Diego State University, San Diego, CA. April 20-22, 2017. (Invited Talk)
5. **Low Cost Wireless Remote Sensors for Arctic Monitoring and Lifecycle Assessment.** Cenek, M. Arctic Domain Awareness Center (ADAC) Department of Homeland Security Biennial Review. Washington D.C. November 9-10, 2016.
6. **Cross Test Case Integration.** Alaska EPSCoR Annual Meeting. International Arctic Research Center. University of Alaska Fairbanks, Fairbanks, AK. November 3-4, 2016
7. **The Food-Energy-Water (FEW) Nexus in Islanded Communities and High Latitudes: Issues, Pathways, and Implications Workshop.** NSF Workshop. University of Alaska Fairbanks, Fairbanks, AK. September 7-9, 2016
8. **Salmon and Functional Materials: Knowledge Discovery in Coupled Socio-Ecological Systems and Big Data.** Cenek, M. The Future of Materials Exploration: Intelligent synthesis, discovery, characterization, and optimization workshop. Lawrence-Berkeley National Laboratories. Berkeley, CA. October 4-5, 2016 (Invited Talk)
9. **Remote Sensing in Arctic Regions.** Cenek, M. Arctic Chinook Operation Briefs for Observers and Distinguished Visitors. Poster Presentation. Joint Base Elmendorf-Richardson. State National Guard Armory and Joint Force Headquarters. August 23, 2016.
10. **Towards Emergent Design: Analysis, Fitness and Heterogeneity of Agent Based Models Using Geometry of Behavioral Spaces Framework.** (Poster) Cenek, M., Dahl, S. Special Session on Artificial Life and Society. Proceedings of the Artificial Life Conference 2016, ALife2016. Cancun MX. July 4-8, 2016
11. **Understanding Complex Dynamics of Alaska Salmon Fisheries with an Agent-Based Model.** Cenek, M., Franklin, M. The International Society for Ecological Modeling Global Conference 2016. Towson, MD. May 8-12, 2016.
12. **Social network analysis methods to analyze the corporate governance of the Nigerian economy.** Cenek, M., Harris, J., Oyster, L., Wilcox, F. UAA Undergraduate Research and Discovery Symposium. Anchorage AK. April 4-15, 2016
13. **Institutional Academic Assessment through Analysis of Student Activity.** Hu, M., West, L., Cenek, M. UAA Undergraduate Research and Discovery Symposium. Anchorage AK. April 4-15, 2016

14. **Computational Assessment of Adaptive Capacity in Social Networks.** Cenek, M., Ching, B., Main, R., Thomson, H. UAA Undergraduate Research and Discovery Symposium. Anchorage AK. April 4-15, 2016
15. **Understanding the Interaction Dynamics of the Social and Natural Systems of the Kenai River Salmon Fisheries: an Agent Based Model.** Franklin, M., Cenek, M. 3rd annual UAA Faculty Research & Creative Activity Symposium. Strength and Resiliency in a Changing World. Talk and Poster. April 7-8, 2016
16. **Neuromorphic, Low Cost, Wireless Sensor Networks for Arctic Monitoring.** Cenek, M., Mobley, M. Devins, M., Rodriguez, D. Arctic Science Summit Week 2016. Arctic Observing Summit. Fairbanks, AK. March 16-18, 2016.
17. **What do Nano-technology, Brain, and Border Patrol Have in Common?** Cenek, M., UAF Geophysical Institute, Science for Alaska Public Lecture Series. Westmark Hotel, Fairbanks, AK, January 19, 2016. (Invited Talk)
18. **A Computational Framework for Analysis and Understanding of Agent-based Models and Agent Behaviors.** Cenek, M., Computer Science Department Colloquium Series, University of Alaska Fairbanks, Fairbanks, AK. January 19, 2016.
19. **Traditional Problems, Unconventional Solutions: Alternative architecture design for remote sensing in the Arctic.** Cenek, M., UAA CSCE Colloquium Series, January 15, 2016.
20. **Natural Language Processing and Social Network Analysis Tools.** Center for Advanced Computation, A Life Lab, Reed College, Portland, OR, December 16, 2015.
21. **Understanding 4,000 articles in 10 Minutes through Interactive Visualization.** Cenek, M., Ching, B., Gurganious, B., Logan, N., Southern, S. Talk and Poster. Alaska NSF EPSCoR: Data to Decisions Visualization Workshop. November 16-17, 2015. Fairbanks, AK.
22. **Remote Sensing in the Arctic Region.** Cenek, M., Mobley, M., Devins, M.. AAAS. Arctic Science Conference. Healthy Estuaries: Sustainability and Resilience. 2015. Anchorage, AK. October 1-3, 2015.
23. **Understanding Complex Dynamics of Alaska Salmon Fisheries with an Agent-Based Model.** Franklin, M., Cenek, M. AAAS. Arctic Science Conference. Healthy Estuaries: Sustainability and Resilience. 2015. Anchorage, AK. October 1-3, 2015.
24. **Decentralized, Asynchronous Sensor Networks for Arctic Regions.** Cenek, M. Talk. Arctic Domain Awareness Center, First Annual Partners' Meeting. Alaska, AK. June 29-30, 2015.
25. **Cross Test Case Scientific Integration.** Cenek, M. Talk. Alaska NSF EPSCoR Southeast Test Case Research and Outreach Workshop. Juneau AK. April 30 - May 2, 2015.
26. **Southcentral Test Case Integration.** Cenek, M. Talk. Alaska NSF EPSCoR Southcentral Test Case Research and Outreach Workshop. Anchorage AK. April 24-25, 2015.
27. **Construction of an Agent Based Platform for Assistance with Fishery Policy Determination.** Franklin, M, Cenek, M. Poster. Undergraduate Research and Discovery Symposium. University of Alaska Anchorage. April 17, 2015. *Best Poster Award*
28. **Predictable Behavior in Complex Systems: Statistical Analysis of Stochastic Agent Based Models.** Dahl, S., Cenek, M. Poster. Undergraduate Research and Discovery Symposium. University of Alaska Anchorage. April 17, 2015.
29. **Data-Driven Anomaly Detection for Irrigation Canals.** Devins, M, Cenek, M, Dotson, A. Poster. Undergraduate Research and Discovery Symposium. University of Alaska Anchorage. April 17, 2015. *Best Poster Award*
30. **Network Analysis of Lateral Gene Transfer.** Gray, H, Cenek, M. Poster. Undergraduate Research and Discovery Symposium. University of Alaska Anchorage. April 17, 2015.
31. **Occam's Network: Models as Algorithms.** Roys, T, Cenek, M. Poster. Undergraduate Research and Discovery Symposium. University of Alaska Anchorage. April 17, 2015.

32. **How Can We See the Development of Scientific Fields?** Harriss, J., Cenek, M. Poster. Undergraduate Research and Discovery Symposium. University of Alaska Anchorage. April 17, 2015.
33. **Making sense of our lives: A computational approach to understanding multiagent simulations.** Cenek, M, Dahl, S.K. Invited Speaker. Complex System Group. University of Alaska Anchorage. April 10, 2015.
34. **ICAN Research.** Faculty Research Symposium. Project Poster Presentations. University of Alaska Anchorage. September 5, 2014.
35. **System Integration: A Network Driven Multi-Agent Stochastic Simulation.** Cenek, M. Invited Speaker. Alaska NSF EPSCoR. South Central Test Case Annual Workshop. Soldotna, AK. May 14-16, 2014
36. **Brain-Wave Based Authentication in Noisy and Distractive Environments.** Cenek, M., Tee, F., McWilliams, C. Talk and Poster. Behavioral Conference of the North. University of Alaska Anchorage. Anchorage AK. April 19, 2014
37. **Computer Simulated Modeling of the Ecological Impact of a Population Splitting Event.** Dahl, S., Cenek, M. Talk and Poster. Undergraduate Research and Discovery Symposium. University of Alaska Anchorage. April 18, 2014.
38. **Growth Dynamics of Silicate Flowers.** Hussein, S., Maselko, J., Pantaleone, J., Cenek, M., Sopp, T. Poster. Undergraduate Research and Discovery Symposium. University of Alaska Anchorage. April 18, 2014.
39. **Eliminating Traffic Jams With Fluctuation Reduction.** Brueggeman, K., Cenek, M., Babb, B. Poster. Undergraduate Research and Discovery Symposium. University of Alaska Anchorage. April 18, 2014.
40. **Cama-i Ellam Yui: Yup'ik Spell Checking Software.** Cenek, M., Somerville, E. Poster. Undergraduate Research and Discovery Symposium. University of Alaska Anchorage. April 18, 2014.
41. **Neuromorphic Implementation of a Human Inspired Computer Vision System for Object Recognition in Video.** Southern, S., Cenek M. Talk and Poster. Pacific Northwest AIAA 7th Technical Symposium. Seattle WA. November 2, 2013.
42. **Neuromorphic Computer Vision. Complex Systems Brown Bag Seminar.** Invited Speaker. Complex System Group. University of Alaska Anchorage. September 20, 2013.
43. **A Markov Model for Analysis of Musical Genre and Style.** Brickley, J., Olsson, W., and Cenek M. Poster. Undergraduate Research and Discovery Symposium. University of Anchorage Alaska. April 19, 2013.
44. **Stochastic Agent Based Model of Chemical Reaction and Diffusion.** Cenek, M., Hussein, S., Babb, B. Poster. Undergraduate Research and Discovery Symposium. University of Anchorage Alaska. April 19, 2013.
45. **Non-converntional computations in an idea and a computer vision models.** Invited Speaker. Complex System Group. University of Alaska Anchorage. November 9, 2013.
46. **Information Processing in Two-Dimensional Cellular Automata.** Poster. Functional Engineered Nano-Architectures 4th Annual Review, Los Angeles, California. January 29-30, 2008.
47. **Information Processing in One-Dimensional Cellular Automata.** Poster. Functional Engineered Nano-Architectures 3rd Annual Review, Los Angeles, California. January 16-17, 2007.
48. **Remotely Controlled Observatories.** Invited Speaker. Willamette University, Imaging the Sky Conference, Salem, Oregon. October 18, 2003.
49. **Multiple Objective Optimization Problems.** Lecture. Department of Electrical and Computer Engineering, VLSI Research group. Portland State University. April 28, 2003.
50. **Software Considerations for Remotely Controlled Observatories.** Guest Speaker. American Association of Physics Teachers, Portland State University. March 9, 2002.

51. **Using Data Envelopment Analysis in Evolutionary Algorithms for Multiobjective Optimization.** Anderson T. R., Greenwood G. W., and Cenek M. Unpublished Technical Report.

Teaching:

Assistant Professor: University of Alaska Anchorage, Department of Computer Science and Engineering and Honors College

MATH A231: Introduction to Discrete Mathematics. Summer 2014. Enrollment: 33

CSCE A311: Algorithms and Data Structures. Fall: 2012, 2013. Spring: 2015, 2016. Enrollment: 30

CSCE A351: Automata, Algorithms and Complexity. Spring 2013, 2014, 2015. Enrollment: 10

CSCE/CPLX A394b: Complex Networks and Social Network Analysis. Spring 2015, 2016.

Enrollment: 15

CSCE/CPLX A394a: Modeling of Complex Systems. Spring 2013, 2014. Enrollment: 8

CSCE 415/615: Machine Learning. Spring 2016. Enrollment: 13

CSCE 470: Computer Science and Engineering Capstone Project. Spring 2017. Enrollment: 21

CS A109: Simulation and Modeling in NetLogo. Summer 2013, 2014, 2015. Enrollment: 16

CPLX/BIOL A200: Introduction to Complexity. Fall 2012, 2013, 2013, 2014, Spring 2014.

Enrollment: 18

University Of Idaho, Moscow ID. Instructor.

SESTEP: Social Ecological Systems Training and Education Program (SESTEP). October 2016 – April 2017 Enrollment: 8

Instructor/Faculty: Portland State University, Department of Computer Science.

CS 350: Algorithms and Complexity. Summer 2003 – Summer 2006. Enrollment: 45

CS 251: Discrete Structures II. Spring 2009. Enrollment: 40

CS/EAS 407 001: MECOP Seminar. Spring 2006. Enrollment: 25

CS 106: Computing Fundamentals II. Summer 2003 - Fall 2006. Enrollment: 300

Teaching Assistant: Portland State University, Department of Computer Science.

CS 442/542: Introduction to Artificial Intelligence. Spring 2011. Enrollment: 30. Instructor: Dr. Bart Massey

CS 410/410: Open Source Development. Summer 2011. Enrollment: 50. Instructor: Dr. Bart Massey

CS 350: Algorithms and Complexity. Fall 2010. Enrollment: 60. Instructor: Dr. Bart Massey

CS 250: Discrete Structures I. Fall 2009. Enrollment: 80. Instructors: Drs. Sergio Antoy, Suresh Singh.

CS 251: Discrete Structures II. Spring 2009. Enrollment: 40. Instructor: Dr. Sergio Antoy

Student Thesis:

1. Undergraduate Research Thesis Advisor: **Masa Hu.** Shape Recognition Using Computer Vision: Classification of Growth Regimes in Chemical Gardens. University of Alaska Anchorage. Honors College. BS Computer Science. Awarded Spring 2017.
2. MS Thesis Advisor: **Maxwell Franklin.** Agent Based Models for Coupled Socio-Ecological Systems Modeling. University of Alaska Anchorage. Department of Civil Engineering. MS Civil Engineering. Awarded Summer 2017.
3. MS Thesis Committee: **Matthew Ahlrichs.** Sensor Network Lifecycle Assessment. University of Alaska Anchorage. Department of Civil Engineering. MS Civil and Environmental Engineering. In process – planned Spring 2018.

4. MS Thesis Committee: **Jason Kintner**. Planning of optical networks. University of Alaska Anchorage. Engineering and Project Management Department. MS Project Management. Awarded Spring 2016.
5. Undergraduate Research Thesis Advisor: **Blake Romero**. Reflections in the Data: Citation Network Analysis as a Method for Investigating the Development of Anthropological Theoretical Frameworks and the Composition of Social Theory. University of Alaska Anchorage. Honors College. BS Anthropology. Awarded Spring 2015.
6. MS Thesis Advisor: **Qandeel Fatima**. Text Summarization. University of Northern British Columbia. Department of Computer Science. MS Computer Science. In process – planned Spring 2018.
7. External Reviewer. **Sherry Wolf**. Homeless Young Adults Caring For Their Health. Advisor: Dr. Sharyl Toscano. MS Nursing Thesis Defense. April 8, 2014. Spring 2015

Service:

University:

UAA Faculty Senator. UAA Governance. April 2014 – 2016.

UAA Honors College Council. Honors College Governance. September 2013 – present

UAA Honors College Prioritization Task Force. 2014 – 2016

ICAN Lab Director. (Artificial Intelligence, Complex Systems, Adaptive Systems and Networks. ICAN). University of Alaska Anchorage. 2013 - present

UAA Undergraduate Research and Scholarship Task Force. Honors College Office of Undergraduate Research and Scholarship. Fall 2012- present

UAA Complex Systems Faculty Group. Fall 2012 – 2016

Professional:

- Reviewer: **Energies**. ISSN (print):1996-1073
- Reviewer: **Canadian Journal of Fisheries and Aquatic Sciences**. ISSN (print) : 0706-652X; ISSN (electronic) : 1205-7533
- Reviewer: **ALife 2018**. July 23-27, 2018. Tokyo, Japan
- Reviewer: **Journal of Applied Sciences** (ISSN 2076-3417). Special Issue on Bio-Inspired Robotics.
- Reviewer: **2018 International Joint Conference on Neural Networks (IJCNN 2018)**, IEEE Technical Program Committee. Rio de Janeiro, Brazil, July 8-13, 2018
- Reviewer: **Sensors**. Open Access Journal. (ISSN 1424-8220)
- Science Steering Committee: Vermont EPSCoR **Integrated Assessment Modeling** workshop, 2018
- Organizing Committee: **ICIP IEEE International Conference on Image Processing Conference**. Anchorage, 2021
- Organizing Committee: **KDD Knowledge Data & Discovery Conference**. Anchorage, 2019
- Reviewer: **International Journal of Geographical Information Science**
- Reviewer. **ECAL 2017**: 14th European Conference on Artificial Life. September 4-8, 2017. Lyon, France.
- Reviewer. **IJCNN 2017**: International Joint Conference on Neural Networks. May 14-19, 2017. Anchorage, AK
- Reviewer. **Ecological Modeling**. ISEM 2016. Elsevier.
- Reviewer. **ALife 2016**: The Sixteenth International Conference on the Synthesis and Simulation of Living Systems. July 4-8, 2016. Cancun, Mexico.
- Algorithms Track Chair and Reviewer. **7th ICCCNT**: 7th International Conference on Computing, Communications and Networking Technologies. 2016. July 6-8, 2016. Dallas-Fort Worth, TX, USA
- Technical Committee, Reviewer, and Session Chair: **NMDC 2015**: 10th IEEE Nanotechnology Materials and Devices Conference. Anchorage, AK. 13-16, September, 2015.

- Organizing Committee Member and Session Chair. **ECS 4.0**: International Conference on Emergence in Chemical Systems 4.0. University of Alaska Anchorage. June 23-26, 2015.
- Reviewer. **ECAL2015**: 13th European Conference on Artificial Life. 20-24 July, 2015. York, UK
- Algorithms Track Chair and Reviewer. **6th ICCCNT**: 6th International Conference on Computing, Communications and Networking Technologies. 2015. July 13-15, 2015. Dallas-Fort Worth, TX, USA
- Reviewer. **ALife 2014**: The Fourteenth International Conference on the Synthesis and Simulation of Living Systems. July 30-August 2, 2014. New York, NY USA.
- Algorithms Track Chair and Reviewer. **5th ICCCNT**: International Conference on Computing, Communications and Networking Technologies. 2014. July 11-13, 2014. Hefei, Anhui, China.

In Media:

- Interview: Alaska EPSCoR Newsletter: Models a Key Part of Coordination Integration Synthesis (CIS) Efforts. September 12, 2016. <https://www.alaska.edu/files/epscor/pdfs/Fall16newsletter-8.pdf>
- Interview: Green and Gold News. Research: Using Kenai salmon runs to understand social-ecological change. June 1, 2016. <http://greenandgold.uaa.alaska.edu/blog/43335/research-discovering-capacity-adapt-climate-change/>.
- Interview: News Miner. Biological designs could guide computer systems. By Diana Campbell Fairbanks, AK. January 31, 2016 (Online): http://www.newsminer.com/features/sundays/community_features/biological-designs-could-guide-computer-systems/article_a2b3f5f6-c731-11e5-ae36-bb39e557794d.html
- Video: What do nano-technology, brain and border patrol have in common? Cenek, M. Science For Alaska. Public Lecture Series. <http://www.gi.alaska.edu/media-and-public-relations/2016-lectures> (www.youtube.com/watch?v=ljZFGVoF38)
- Interview: KFBX: "Science for Alaska". Fairbanks, AK. 1/19/2016. <http://970kfbx.iheart.com/media/play/26657800/>
- Interview: Hometown U: Artificial Intelligence in the Arctic. By Kathleen McCoy. Alaska Daily News. August 8, 2015 (print) <http://www.adn.com/article/20150808/hometown-u-artificial-intelligence-arctic> (on-line). Reprinted in UAA's Green and Gold News. <http://greenandgold.uaa.alaska.edu/blog/36076/research-artificial-intelligence-in-the-arctic/> August 12, 2015
- Interview. Social Media Followers Appreciate its Health Access. by Derek Smith for KYUR ABC Channel 13. <http://www.youralaskalink.com/home/Social-media-followers-appreciate-its-health-access-266540201.html> July 9, 2014

Awards and Recognitions:

- 2017 ABM 17 Symposium. Professional Enhancement Award.
- 2015 Visit Anchorage Meeting Champion. Drs. Jerzy Maselko, Saif al Zahir, Adriano Calvacanti, Martin Cenek. Awarded by: Anchorage Convention and Visitors Bureau. <http://www.anhcorage.net>

Work Experience:

Google, Inc. Mountain View, CA. and Portland State University, Portland, OR. Student Software Developer. Open Source Software Development. 2011 Google Summer of Code. Summer 2011.

Portland State University, Portland, OR.

Research Assistant. Department of Computer Science. 2011- 2012.

Graduate Research Assistant. Department of Computer Science. 2007- 2011.

Graduate Research Assistant and Teaching Assistant. Department of Computer Science and Department of Electrical and Computer Engineering. 2004-2005

Information Technology Specialist. Office of Admissions, Records and Financial Aid. 2001-2005

Davex Inc.

IT Consultant and Graphic Designer. Zilina, Slovak Republic. 1995-1997.