CURRICULUM VITAE

Joshua Eckroth

Math/CS Department
Stetson University
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Education

2014   Ph.D. in Computer Science
Computer Science and Engineering Department
The Ohio State University
Field: Artificial Intelligence
Thesis: "Anomaly-Driven Belief Revision by Abductive Metareasoning"
Advisor: John R. Josephson

2008   B.S. in Computer Science
B.A. in Mathematics
Humboldt State University

Employment

2014-   Assistant Professor of Computer Science
Stetson University

2008-2014   Research and Teaching Assistant
Computer Science and Engineering Department
The Ohio State University

Consulting

2018-   Data Analyst and Software Engineer
Joel S. Duhl, Inc.

2015-   Chief Architect
i2k Connect, Inc.

Peer-Reviewed Publications

J. Eckroth, K. Chen, H. Gatewood, B. Belna. "Alpaca: Building Dynamic Cyber Ranges with Procedurally-Generated Vulnerability Lattices." *Proceedings of the 2019 ACM Southeast Conference*, pp 78-85 (2019)

J. Eckroth, E. Schoen. "A Genetic Algorithm for Finding a Small and Diverse Set of Recent News Stories on a Given Subject: How We Generate AAAI's AI-Alert." *Proceedings of the AAAI Conference on Artificial Intelligence* 33(01), IAAI Technical Papers: Deployed Papers, pp 9357-9364 (2019) – **Deployed Application Award**

J. Eckroth, R. Anderson. "Tarot: A Course Advising System for the Future." *Journal of Computing Sciences in Colleges* 34(3), pp. 108-116 (2018)

J. Eckroth. "A Course on Big Data Analytics." *Journal of Parallel and Distributed Computing* 118(1), pp. 166-176 (2018)

J. Eckroth. "Teaching cybersecurity and Python programming in a 5-day summer camp." *Journal of Computing Sciences in Colleges* 33(6), pp. 29-39 (2018)

J. Eckroth. "Model AI Assignments 2018: Biductive computing: Several variants of a universal paradigm." *Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence*, online: http://modelai.gettysburg.edu/2018/biductive/index.html (2018)

R. G. Smith and J. Eckroth. "Building AI Applications: Yesterday, Today, and Tomorrow." *AI Magazine* 38(1), pp. 6-22 (2017)

J. Eckroth. "Teaching Future Big Data Analysts: Curriculum and Experience Report." *Proceedings of the 7th NSF/TCPP Workshop on Parallel and Distributed Computing Education*, pp. 346-351 (2017) – **Best Paper Award**

J. Eckroth. "Model AI Assignments 2017: Git planner." *Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence*, online: http://modelai.gettysburg.edu/2017/gitplanner/index.html (2017)

J. Eckroth. "Model AI Assignments 2017: Organic pathfinding." *Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence*, online: http://modelai.gettysburg.edu/2017/pathfinding/index.html (2017)

J. Eckroth. "Iterated Abduction." *Proceedings of the Twenty-Ninth International Florida Artificial Intelligence Research Society Conference*, pp. 32-37 (2016)

J. Eckroth. "Teaching Big Data with a Virtual Cluster." *Proceedings of the 47th ACM Technical Symposium on Computer Science Education (SIGCSE)*, pp. 175-180 (2016)

J. Eckroth. "Foundations of a Cross-Disciplinary Pedagogy for Big Data." *Journal of Computing Sciences in Colleges* 31(3), pp. 110-118 (2015)

J. Eckroth and J. Josephson. "Anomaly-Driven Belief Revision and Noise Detection by Abductive Metareasoning." *Advances in Cognitive Systems* 3, pp. 123-142 (2014)

J. Eckroth and J. Josephson, "Anomaly-Driven Belief Revision by Abductive Metareasoning." *Proceedings of the Second Annual Conference on Advances in Cognitive Systems*, pp. 73-90 (2014)

J. Eckroth and J. Josephson. "Commonsense Abductive Reasoning and Metareasoning Using Knowledge from Bayesian Networks." *Proceedings of the AAAI-14 Spring Symposium, Knowledge Representation and Reasoning in Robotics*, pp. 31-38 (2014)

B. G. Buchanan, J. Eckroth, R. G. Smith. "A Virtual Archive for the History of AI." *AI Magazine* 34(2), pp. 86-98 (2013)

J. Eckroth, L. Dong, R. G. Smith, B. G. Buchanan. "NewsFinder: Automating an AI News Service." *AI Magazine*, pp. 43-54 (2012)

J. Josephson, J. Eckroth, T. Miller. "Estimation of adversarial social networks by fusion of information from a wide range of sources." *Proceedings of the 12th International Conference on Information Fusion*, pp. 2144-2152 (2009)

J. Eckroth, R. Aytche, G.-A. Amoussou. "Toward a science of design for software-intensive systems." *DESRIST 2007 Proceedings*, pp. 39-53 (2007)

Books Under Contract

J. Eckroth. *AI Blueprints: How to build and deploy AI business projects*, Packt Publishing, December 2018. 250 pages. ISBN-13: 978-1788992879

Video Courses Under Contract

J. Eckroth. *Advanced Artificial Intelligence Projects with Python [Video].* Packt Publishing, March 2018. 2 hours. ISBN-13: 978-1788832403

J. Eckroth. *Python Artificial Intelligence Projects for Beginners [Video].* Packt Publishing, December 2017. 2 hours. ISBN-13: 978-1788394345

Patent Applications

B. G. Buchanan, R. G. Smith, E. Schoen, J. Eckroth. "Method and System for Unsupervised Learning of Document Classifiers," US20170293842A1, 2017

Technical Reports

J. Eckroth, D. Reddy, J. Josephson, R. Chellappa, T. Miller. "From background subtraction to threat detection in automated video surveillance." *ARL CTA Report* (2009)

Extended Abstracts

J. Eckroth. "Towards a Cross-Disciplinary Pedagogy for Big Data." *Proceedings of the NSF Workshop on Curricular Development for Computing in Context*, Stetson University (2015)

J. Eckroth. "Abductive Metareasoning for Truth-Seeking Agents." *AAAI-2012/SIGART Doctoral Consortium*, pp. 2388-2389 (2012)

J. Eckroth, G.-A. Amoussou. "Improving software quality from the requirements specification." *Science of Design Symposium 2007 Proceedings*, pp. 38-39 (2007)

J. Eckroth, R. Aytche. "Toward a science of design for software-intensive systems." *Science of Design Symposium 2007 Proceedings*, pp. 40-41 (2007)

Invited Talks

J. Eckroth. "Anomalies as Stimuli for Attending to the Meta-Level." Invited Talk. *U.S. Naval Research Laboratory Symposium* (Aug 7, 2014)

Workshop Presentations

J. Eckroth. "Teaching Big Data with a Virtual Cluster." *SPLASH-E Workshop*, Pittsburgh, Pennsylvania (2015)

Working Papers

J. Eckroth. "Blue Sky Ideas in Artificial Intelligence Education from the EAAI 2017 New and Future AI Educator Program." *Working paper in The Seventh Symposium on Educational Advances in Artificial Intelligence* (2017)

Panels

Panel: "Why I Teach in Prison?" *Colloquium on Teaching and Learning, Stetson University*, April 6, 2018

Panel: "Non-traditional research experiences for undergraduates," *8th Symposium on Educational Advances in Artificial Intelligence*, February 4, 2018

Panel: "Blue Sky Ideas in AI Education," *7th Symposium on Educational Advances in Artificial Intelligence*, February 5, 2017

Panel: "Wide Scale Integration of PDC in Undergraduate Curriculum: Issues and Challenges," *7th NSF/TCPP Workshop on Parallel and Distributed Computing Education*, May 29, 2017

Panel: "Belief Revision Discussant," *Second Annual Conference on Advances in Cognitive Systems*, December 12, 2013

Courses Taught

Stetson University:

- Artificial Intelligence
- Big Data Mining and Analytics
- Computer Organization
- Operating Systems
- Software Development I
- Software Development II
- Database Systems
- Introduction to Computing
- Introduction to Computer Science I
- Introduction to Cybersecurity
- Computer and Network Security
- Cybersecurity Summer Camp
- Artificial Intelligence Summer Camp
- First-Year Seminar in Cybersecurity
- Independent Study: Corporate Security Audit
- Independent Study: Readings in Retrocomputing

The Ohio State University:

- Survey of Artificial Intelligence I: Basic Techniques
- Computational Thinking in Context: Images, Animation, and Games
- Introduction to C++ Programming
- Introduction to Programming and Algorithms for Engineers and Scientists: C++
- Elementary Computer Programming: Java

Grants Received

2018   Orlando Economic Partnership, matching support for hackathon ($2,000)

2018   Nina B. Hollis Institute Impact Award, increasing diversity in CS through scholarships for summer camp ($2,725 for 3 years, totaling $8,175)

2018   AI Journal Foundation, enhancing visualizations on AITopics.org (€6,000)

2017   CRA-W CREU, paid research experience for four undergraduates ($9,000)

2014   Stetson University Summer Grant ($5,000)

Honors

2012   Graduate Associate Teaching Award
        The Ohio State University Graduate School

2012   Eleanor Quinlan Memorial Award (Teaching Award)
        Computer Science and Engineering Department
        The Ohio State University

Student Advising

Advised 59 students on academic issues, averaging 25-30 per semester

Mentored 21 students in distinct two-semester senior research projects

Service to Stetson University

Co-creator of Cybersecurity BS Program, 2018-2019

Admissions Committee, 2017-ongoing

Academic Technology Committee, 2017

Co-creator of Data Analytics minor, 2015-2017

Co-organizer and Faculty Mentor, Stetson Hackathons, 2016-ongoing

Organizer, High School Programming Competitions, 2014-ongoing

Service to the Community

Creator and Teacher of Cybersecurity and AI Summer Camps, 2017-ongoing

Editor-in-Chief, AITopics.org, 2019-ongoing

Associate Editor, AITopics.org, 2015-2019

Designer of computer lab for Tomoka Correctional Institution, 2018-2019

Presentations at Tomoka Correctional Institution: Python Language, Esoteric Programming Languages, Cybersecurity, 2017-2019

Mentor, AFA CyberPatriot Competition, St. Augustine Team, 2019-ongoing

Program Committee, EAAI: 2017, 2018

Program Committee, EduHPC: 2017, 2018, 2019

Program Committee, CCSC: 2017, 2018

Program Committee, SIGCSE: 2015, 2016, 2017, 2018

Professional Affiliations

Member, Association for the Advancement of Artificial Intelligence (AAAI)

Member, Association for Computing Machinery (ACM)
Including: SIGAI, SIGCSE, ACM-W