EURA E. SHIN

eurashin.github.io

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EDUCATION

Bachelor of Engineering, Computer Science (expected December 2019) — University of Kentucky
3.95/4.0 GPA, minor in mathematics and honors program — Lexington, KY

ACADEMIC EXPERIENCE

Jun 2019 – Aug 2019
Robotics and Autonomous Systems (NSF REU)
University Southern California — Los Angeles, CA — Assistant Professor Stefanos Nikolaidis
Tools used: ROS, C++
- Developed robot strategies to support stroke patients in performing Assisted Daily Living (ADL) tasks

Dec 2017 – Present
Undergraduate Research Assistant
University of Kentucky — Lexington, KY — Assistant Professor Simone Silvestri
Tools used: Python, Arduino, MySQL, R
- Developed user-centric active learning techniques for appliance prediction in an IoT smart outlet
- Mentored student in high school thesis

June 2018 – Aug 2018
Medical Informatics (NSF REU)
DePaul University — Chicago, IL — Professor Daniela Raicu
Tools used: R
- Explored methods of cost reduction in Computer Aided Diagnosis (CAD) systems:
  - Reducing cost and uncertainty using label propagation
  - Using weak supervision to expand expert annotated data
  - Predicting diagnostic difficulty using selective iterative classification

Feb 2018 – May 2018
Ecoinformatics Research, Stouffer Lab
University of Canterbury— Christchurch, New Zealand — Associate Professor Daniel Stouffer
Tools used: C++, Python, Oracle Grid Engine
- Compared ecological communities using network alignment
- Wrapped C++ software to be used in python, added functionality for fixing nodes and weighted graph alignment

May 2017 – Dec 2017
Firmware Engineering Intern
Lexmark International — Lexington, KY
Tools used: Python, C++, Git, Hostapd, Bitbake
- Developed a new test suite for wireless connectivity testing using virtual access points
- Winning project of annual Lexmark Student Symposium with 20+ posters on display (below)

May 2016 – Aug 2016
Research Internships in Science and Engineering (DAAD RISE)
Computational Modeling Research Intern
Karlsruhe Institute of Technology — Karlsruhe, Germany — Professor Olaf Dossel
Tools used: Matlab, C++
- One of 300 students internationally awarded the DAAD RISE stipend
- Expanded existing software to simulate an episode of atrial fibrillation in a computational model of the heart
- 1st place, undergraduate poster competition, computer/information sciences, KAS 2016 (below)

RESEARCH OUTCOMES

Publications

- Khamesi, A. R., **Shin, E.**, Bahr, Z., Silvestri, S. (2020, Jan). Machine Learning in the Wild: The Case of User-Centered Learning in Cyber Physical Systems. In International Conference on Communication Systems and Networks (COMSNETS). **Accepted for publication**.
- **Shin, E.**, Khamesi, A. R., Bahr, Z., Silvestri, S., and Baker, D. (2020). A user-centered active learning approach for appliance recognition. Submitted to conference. **Under review**.
- Bramon, B., **Shin, E.**, CaraDonna, P., and Stouffer, D. (2020). Untangling the seasonal dynamics of plant-pollinator communities. Submitted to journal. **Under review**.
- **Shin, E**., Berglin, S., Furst, J., Raicu, D. (2019, July). Expanding annotated data with informed labels for weak supervision. In International Conference on Data Mining and Pattern Recognition. (33% acceptance rate)

- Berglin, S., **Shin, E**., Furst, J., Raicu, D. (2019, March). Efficient learning in computer-aided diagnosis through label propagation. In Medical Imaging 2019: Computer-Aided Diagnosis (Vol. 10950, p. 109501I). International Society for Optics and Photonics.

Presentations

- **Shin, E.**, Dennler, N., Pocius, R., Zhang, H., Zamani, N., Culbertson, H., and Nikolaidis, S. (2019). Robot assisted hair-brushing. Demonstration track at Conference on Neural Information Processing Systems (NeurIPS).
- Tapia, A and **Shin, E**. (2018) *Fractals as a tool for introducing computer science concepts for K-12 and beyond.* Presented at National Conference on Undergraduate Research. Mentor: Dr. Jerzy Jaromczyk, University of Kentucky.
- **Shin, E**. (2016) *Automated Initiation of Fibrillatory Excitation in Monodomain Simulations.* Presented at Kentucky Academy of Science Annual Meeting. Louisville, KY. Mentor: Dr. Olaf Dossel and MS Axel Loewe, KIT Biomedicial engineering.
- **Shin, E** and Ellis, J. (2015) *The Development of a Computer Program to Simplify Complex Knot Diagrams using Global Moves.* Presented at Posters at the Capitol. Frankfort, KY. Mentor: Dr. Uta Ziegler, WKU Computer Science.

HONORS AND AWARDS

Barry M. Goldwater Scholar — April 2019
Computing Research Association Programming Languages Mentoring Workshop grant — October 2017
1st place Kentucky Academy of Sciences informatics poster competition — September 2016
Singletary Scholar (full-ride scholarship, 20 incoming students/class) — August 2016

LEADERSHIP INVOLVEMENT

Dec 2016 – Dec 2017 | **Founding Vice-Chair**
ACM-W, University of Kentucky Chapter — Lexington, KY
Founding member and interim president of campus chapter. Coordinated all on-campus meetings, organized outreach events, managed collaboration with faculty, and managed social media pages.

Dec 2016 – Dec 2018 | **Volunteer Engineering Instructor**
Newton's Attic Engineering Camp — Lexington, KY
Assisted in teaching young students engineering skills such as design, manufacturing, and programming through hands on activities.