Willa Potosnak

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Website
Google Scholar Profile
LinkedIn

Education

Carnegie Mellon University (CMU), Robotics Institute — Beginning Fall 2022

Ph.D. in Robotics

Mentor: Dr. Artur Dubrawski

Duquesne University, Rangos School of Health Sciences — May 2022

Summa Cum Laude

B.S., Biomedical Engineering with Minor in Mathematics

Research Experience

CMU — May 2020-Present

Mentors: Dr. Artur Dubrawski (May 2020-Present), Dr. James Kyle Miller (May 2020-Present), Mr. Anthony Wertz (Summer 2020)

Research Intern in the Auton Lab (hired between RISS summers)

August 2021-Present

Conducted research with machine learning (ML) to improve the reliability of algorithms for distributed intra- and extra-institutional organizations with data privacy constraints.

August 2020-May 2021

Advanced research with ML to develop intra-operative binary classification models to predict multiple post-operative outcomes for cardiothoracic surgery patients.

Robotics Institute Summer Scholars (RISS) Program Researcher in the Auton Lab

Summer 2021

Conducted research with ML to improve the reliability of algorithms that aim to provide insight into beneficial knowledge transfer opportunities.

Summer 2020

Conducted research with ML to develop an intra-operative binary classification model to predict acute renal failure for cardiothoracic surgery patients.

Duquesne University Biomedical Engineering Department Lab — January 2019-May 2019

Lab Director: Dr. Benjamin Goldschmidt

Assistive Technology Project Co-Lead

Designed and 3-D printed an assistive device to facilitate tasks for those with grip disabilities due to stroke or other hand injuries.

Designed and printed an assistive device for a disabled faculty member to facilitate instruction with hand-held medical tools.

Other Lab Experience

The Citizen Science Lab May 2019-August 2019

Curriculum designer and instructor of STEM lessons and experiments for K-12 students.

Achievements

Nominated and accepted to the Undergraduate Consortium (UC) mentorship program at the Thirty-Sixth AAAI Conference on Artificial Intelligence (AI) (AAAI-22).

Student panelist for the 2021 Artificial Intelligence and Data Science Education Leadership meeting hosted by CSforAll and supported by the White House Office of Science and Technology Policy (OSTP) and the National Science Foundation (NSF).

Awarded one of the 2019 John G. Rangos Prizes for Duquesne curriculum proposal that integrated 3-D printing with prosthetic and assistive technology device design for patients.

Skills

3-D Printing: 3-D printer use and maintenance, Autodesk Fusion 360, Ultimaker Cura

Languages/Software/Systems: Python, MATLAB, Linux, HTML, Git, LaTex

Extracurriculars

Volunteer project lead of a CMU Robotics Institute team developing the ***RoboticsEd*** website for the purpose of helping to make robotics and AI resources more accessible to educators and their students.

Piano (12 years of study); guitar (6 years of study)

Publications and Presentations

Potosnak, W., Dufendach K. A., Kaczorowski, D., Miller, J. K., & Dubrawski, A. (2022). Machine Learning Models with Intraoperative Features Improve Risk Predictions Following CABG [Oral Presentation]. *Society of Thoracic Surgeons Coronary Conference*. Abstract details

Dufendach, K. A., Nagpal, C., **Potosnak, W.**, Dubrawski, A., & Kaczorowski, D., (2022). Novel Machine Learning Technique Defines Patients Who Benefit from Off-Pump CABG [Oral Presentation]. *Society of Thoracic Surgeons Coronary Conference*. Abstract details

Potosnak, W., Caldas, S., Dufendach, K. A., Clermont, G., Miller, J. K., & Dubrawski, A. (2022). Robust Rule Learning for Reliable and Interpretable Insight into Expertise Transfer Opportunities [Research Summary]. in *Proceedings of the Thirty-Sixth AAAI Conference on Artificial Intelligence*.

Potosnak, W., Caldas, S., Dufendach, K. A., Clermont, G., Miller, J. K., & Dubrawski, A. (2021). Robust Interpretable Rule Learning to Identify Expertise Transfer Opportunities in Healthcare. *NeurIPS 2021 Workshop Bridging the Gap: from Machine Learning Research to Clinical Practice*. Workshop details

Potosnak, W., Miller, J. K., & Dubrawski, A. (2021). ROCCER Evaluation Within Federated Classifier Selection for Improved Identification of Center Collaboration Opportunities. *Robotics Institute Summer Scholars Working Papers Journal*, 240-246. Paper details

Potosnak, W., Dufendach, K. A., Wertz, A., Miller, J. K., Kilic, A., & Dubrawski, A. (2021 January 29-31). Continuous Intraoperative Data Analysis Using Machine Learning Reveals Multiple Parameters to Predict Post-CABG Renal Failure [Conference presentation abstract]. *Society of Thoracic Surgeons (STS) 57th Annual Meeting*. Meeting details

Rühling Cachay, S., Erickson, E., Bucker, A. F. C., Pokropek, E., **Potosnak, W.**, Osei, S., & Lütjens, B. (2020). Graph Neural Networks for Improved El Nino Forecasting. *NeurIPS 2020 Workshop on Tackling Climate Change with Machine Learning*. Paper details

Potosnak, W., Wertz, A., Miller, J. K., Kilic, A., Dufendach, K. A., & Dubrawski, A. (2020). Cardiothoracic Surgery Analysis for Predicting Acute Renal Failure Outcomes. *Robotics Institute Summer Scholars Working Papers Journal*, 170-175. Paper details