Eryk Banatt

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Experience

The Johns Hopkins University Applied Physics Lab
Laurel, MD

Artificial Intelligence Research Scientist — *April 2019 - Present*

- Evaluated and extended upon cutting edge machine learning techniques to solve sponsor-posed problems
- Trained highly performant models which were deployed in production environments
- Pitched, won, and PI'd two internal research grants together totaling $125k USD
- Developed novel algorithms for learning under domain shift, particularly in convolutional neural networks trained with synthetic data
- Uncovered fundamental properties of latent representations produced by state-of-the-art domain adaptation models
- Developed new methods for uncertainty estimation of black-box models using surrogate models and adversarial attacks
- Led teams of 3-5 people on multiple efforts to perform fundamental research supporting large projects

Miami International Holdings Inc.
Princeton, NJ

Junior Trading Operations Support Specialist — *October 2017 - March 2019*

- Wrote regression test cases to debug functionality in exchange matching engine software
- Wrote VBA Macros in Microsoft Excel to facilitate creation and curation of regression test cases

Education

Johns Hopkins University
Baltimore, MD

M.S. in Artificial Intelligence — *August 2021 - Current*

- Currently pursuing a masters degree in Artificial Intelligence

Yale University
New Haven, CT

B.A. in Cognitive Science — *August 2013 - May 2017*

- Concentration: Expertise and Expert Performance

Projects

Melee Stats

Creative Director — *February 2020 - Present*

- Creative Director for Melee Stats esports content creation team
- Write, edit, and produce for YouTube channel with 20k+ subscribers and 1.5M+ views
- Create freelance esports content for organizations such as the Golden State Warriors and Panda Global

planetbanatt.net

Portfolio Website — *June 2016 - Present*

- Static website with Bootstrap frontend generated via emacs org mode html export
- Hosts write-ups for projects listed below + others, see: planetbanatt.net/projects.html

Invasion of the Ballot Snatchers - Decorrelated Errors in Panel-Based Rank Voting

Blogpost — *January 2020*

- Blogpost about panel-based ranking systems and their ability to reduce individual errors through aggregation
- Leveraged insights from ensemble learning in machine learning models to show that error increases when errors between voters become correlated, especially in tasks with heteroscedastic data

Input Latency Perception in Expert-Level Gamers

Senior Thesis Project — *May 2017*

- Programmed a double-blind input latency perception task using an Arduino microcontroller
- Demonstrated a statistically significant (p=0.0008) difference in perceptual ability between control and expert video game competitors

Skills and Coursework

Skills Python, Pytorch, Keras, Tensorflow, scikit-learn, Pandas, R, Emacs, Git, SQL/SQLite, LaTeX, Davinci Resolve Studio 17

Coursework Artificial Intelligence, Language and Computation, Intelligent Robotics, Computational Vision & Biological Perception, Algorithms, Data Structures, Linear Algebra

Research Synthetic Data, Domain Adaptation, Adversarial Attacks, Active Learning, Label Prioritization, Object Detection, Semantic Segmentation, Semi-Supervised Learning, Uncertainty Estimation, Depth Estimation, Occlusion Reasoning