

# Eryk Banatt

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## Education

### Johns Hopkins University

M.S. IN ARTIFICIAL INTELLIGENCE

- Currently pursuing a masters degree in Artificial Intelligence

*Baltimore, MD*

*August 2021 - Current*

### Yale University

B.A. IN COGNITIVE SCIENCE

- Concentration: Expertise and Expert Performance

*New Haven, CT*

*August 2013 - May 2017*

## 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

## Experience

### The Johns Hopkins University Applied Physics Lab

ARTIFICIAL INTELLIGENCE RESEARCH SCIENTIST

- 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
- Trained highly performant models which were deployed in production environments
- 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

*Laurel, MD*

*April 2019 - Present*

### Miami International Holdings Inc.

JUNIOR TRADING OPERATIONS SUPPORT SPECIALIST

- 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

*Princeton, NJ*

*October 2017 - March 2019*

## Projects

### Melee Stats

CREATIVE DIRECTOR

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

*February 2020 - Present*

### planetbanatt.net

PORTFOLIO WEBSITE

- 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](http://planetbanatt.net/projects.html)

*June 2016 - Present*

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

BLOGPOST

- 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

*January 2020*

### Input Latency Perception in Expert-Level Gamers

SENIOR THESIS PROJECT

- Programmed a double-blind input latency perception task using an Arduino microcontroller
- Travelled to gaming tournament to compare high-level players to a control population of undergraduates
- Demonstrated a statistically significant ( $p=0.0008$ ) difference in perceptual ability between groups

*May 2017*