

Ivan Jutamulia

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EDUCATION

Massachusetts Institute of Technology

Cambridge, MA

Master of Engineering in Computer Science and Artificial Intelligence - GPA: 5.0/5.0

June 2021

B.S. in Computer Science and Engineering, Minor in Statistics and Data Science - Major GPA: 5.0/5.0

June 2020

Relevant Coursework:

- CS: Computation Structures, Elements of Software Construction, Computer Systems Engineering, Design and Analysis of Algorithms, Software Studio: Web Applications, Statistical Computation and Applications, Computational Cognitive Science, Algorithms for Inference, Statistical Learning Theory and Applications, Advanced Natural Language Processing, Modeling with Machine Learning: From Algorithms to Applications, Technical Oral Communication
- Math: Discrete Math for CS, Linear Algebra, Probability and Random Variables, Fundamentals of Statistics, Introduction to Inference, Matrix Methods in Data Analysis, Signal Processing, and Machine Learning

Berkeley High School

Berkeley, CA

International Baccalaureate Program - IB Diploma Received - GPA: 4.0/4.0

June 2016

EXPERIENCE

Second Spectrum Inc. (subsidiary of Genius Sports Group)

Boston, MA (Remote)

Machine Learning Engineer

September 2021 - Present

- Leveraged ML to derive semantically meaningful insights from tracking data for soccer clubs, leagues, and organizations worldwide
- Developed a seq2seq model for automatic detection of soccer events using player pose and tracking input with 90%+ f1 accuracy
- Built a robust and scalable infrastructure to run autoeventing system live on EPL games and power downstream services

MIT Sports Lab

Cambridge, MA

Undergraduate/Graduate Researcher

September 2019 - June 2021

- Developed an evaluation framework for decision-making of NBA players with expected possession value (EPV) metric
- Utilized deep learning approaches to quantify pass and shot difficulty - 0.89 and 0.63 ROC-AUC for respective models
- Analyzed player decision-making and team strategy/execution by characterizing missed opportunities with EPV framework
- Collaborated with San Antonio Spurs and Google Cloud to integrate as a coaching and analytical tool with visualization capability

Vim

San Francisco, CA

Software Engineering Intern

January 2020

- Optimized workflow in healthcare EHR systems by integrating high-value recommendations for provider referrals
- Developed browser extraction tools using optical character recognition and DOM-scraping techniques to pull EHR data
- Built an embedded Chrome extension to seamlessly inject high-value recommendations into the EHR referral system

Second Spectrum Inc.

Los Angeles, CA

Machine Learning Intern

June 2019 - August 2019

- Launched a tracking data and semantics delivery system for the English Premier League with the AI soccer semantics team
- Developed a logistic regression model for classifying bisecting passes and integrated with existing markings - 90% F1 score accuracy
- Optimized training and evaluation infrastructure with Pachyderm to speed up model development process by a factor of 20
- Leveraged Pachyderm framework to retrain and improve the expected goals model - 0.79 to 0.86 ROC-AUC improvement
- Designed and implemented a clustering-based system to identify player archetypes and style of play on a per-game basis

MIT Computer Science and Artificial Intelligence Laboratory

Cambridge, MA

Undergraduate Researcher

May 2018 - August 2018

- Developed a complete task and motion planning system for a life-sized PR2 robot to achieve long-horizon tasks with the LIS group
- Integrated a robust computer vision system that could accurately detect objects and their poses with occlusions up to 50%
- Enabled research on reinforcement machine learning and planning in uncertain domains with small real-world datasets

PROJECTS

Personal Website

June 2020

- Website developed from scratch using ReactJS to display as a personal portfolio online

COVID-19 Sentiment Analysis on Twitter

March 2020 - May 2020

- Trained NLP binary classification models in Python to detect whether coronavirus related tweets are serious or not
- Leveraged models to uncover trends between seriousness and factors such as time and location of tweet

Uber and Lyft Pricing

October 2019 - December 2019

- Analyzed statistical relationships between prices of Uber and Lyft rides and factors such as weather, location, and time of day
- Utilized network analysis, hypothesis testing, time series analysis, and regression to infer correlations and relationships

SKILLS

- **Programming Languages:** Python (proficient), Rust, Java, SQL, HTML, CSS, JavaScript
- **Technical Tools and Frameworks:** Numpy, Pandas, Scikit-Learn, Tensorflow, Keras, PyTorch, AWS, GCP, Docker, ReactJS, ExpressJS, VueJS, MySQL, PostgreSQL, Pachyderm, Apache Beam/Dataflow
- **Languages:** English and Mandarin (fluent)