# 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)