

NICHOLAS R. EGAN

contact@egansoft.com | nicholasegan.me

EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)

5.0/5.0 GPA

Master of Engineering in EECS, Artificial Intelligence Concentration

Spring 2019

- Conducted research under Professor Antonio Torralba in the Computer Vision Group, with thesis “Natural Video Synthesis with Generative Adversarial Networks”

Bachelors of Science in Computer Science and Engineering

Spring 2019

- Member of Tau Beta Pi Engineering Honor Society

WORK EXPERIENCE

PRIMER AI, Machine Learning Engineer, Applied Research (July 2019 – Present) San Francisco, CA

- Created Primer’s models for coreference resolution, factual claim extraction, and entailment, handling task definitions, data labeling, model building, model selection, evaluation, and productionization
- Led the hyperparameter optimization research effort, writing an optimization tool for Bayesian and bandit based tuning and presenting best practices for hyperparameter optimization at Primer
- Designed and ran experiments around explainability, automatic summary evaluation, dataset analysis, multitask learning, machine translation, semi-abstractive summarization, and NLP bias
- Wrote the open-source reference implementation of BLANC, Primer’s human-free summarization evaluation method (github.com/primerai/blanc)

ROBINHOOD, Software Engineering Intern (June 2018 – August 2018)

Menlo Park, CA

- Improved the performance and reliability of Robinhood’s highly available order execution systems

FACEBOOK, Software Engineering Intern (May 2017 – August 2017)

Menlo Park, CA

- Developed tools for spam detection and prevention on the Site Integrity team

AIRBNB, Software Engineering Intern (May 2016 – August 2016)

San Francisco, CA

- Worked on the booking team to develop new product features and improve the matching experience

PRICELINE.COM, Software Engineering Intern (January 2016)

New York, NY

- Developed analytics integration for mobile, and won the Priceline hackathon with a booking chatbot

DRAWBRIDGE, Software Engineering Intern (June 2015 – August 2015)

San Mateo, CA

- Built interactive user interfaces for advertisers using the Drawbridge Identity Graph

PORTFOLIO/SKILLS

Select Projects

- **Primer AI's Systems for Acronym Identification and Disambiguation:** to appear as system paper at the Scientific Document Understanding workshop at AAAI 2021
- **Generalized GAN Reversal:** winner of Yelp Dataset Challenge Round 11
- **N Chainz** (nchainz.com): a decentralized exchange, awarded \$60k prize in the Binance Dexathon
- **Domain Adaptation for Question Retrieval:** NLP project that uses unsupervised adversarial domain adaptation for CNN and LSTM models assessing question similarity
- **Text Inflator** (textinflator.com): tool that expands the length of a block of writing, with 10k monthly users
- **Breezy** (github.com/egansoft/breezy): a minimalistic, high performance web nano-framework

Technical Skills and Expertise

- **Machine Learning:** Deep Learning, Language Modeling, Generative Models, Matrix Methods, Hyperparameter Optimization, Bayesian Inference, Explainability
- **Distributed Systems:** Consensus, Availability, Wait-Free Algorithms, Blockchain Development
- **Software Engineering:** Test Driven Development, Systems Engineering, Code Maintainability
- **Tools:** NumPy, PyTorch, TensorFlow, Scikit Learn, AWS EC2, GCP, Unix/Linux
- **Languages:** Python, Go, Java, JavaScript, Ruby, PHP, Haskell, C

Related Coursework: Machine Learning (6.867), Advanced NLP (6.864), Computer Vision (6.869), Statistical Learning Theory (6.860), Distributed Systems (6.824), Multicore Programming (6.816), Advanced Algorithms (6.046), Computer System Engineering (6.033), Matrix Methods (18.065), Deep Learning (6.S191)