

NICHOLAS ROBERTS

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EDUCATION

University of California San Diego, La Jolla, CA September 2015 - Present
BS Computer Science, Mathematics minor, **Expected graduation:** March 2019, **GPA:** 3.88
MS/PhD Computer Science, pending acceptance: September 2019 -
Courses tutored: DSC 10 (Principles of Data Science), DSC 20 (Data Structures and Python)

EXPERIENCE

UnifyID February 2019 - June 2019
AI Fellow + Machine Learner Intern

Intuit June 2018 - September 2018
Software Engineering Intern: Intuit Futures research group

- Technologies used: Python, PyTorch, TensorFlow, Gensim, Keras, Jupyter Notebook, Matplotlib
- Researched and implemented a novel deep learning model for controllable text generation as a service within Intuit
- Developed a system for proposing alternative candidate sentences for Intuit content writers using deep learning
- Investigated the use of dynamic topic models for customer support tickets to gain actionable insights over time

Altum January 2018 - May 2018
Financial Deep Learning Researcher

- Technologies used: Python, PyTorch, Jupyter Notebook, Matplotlib
- Developed language model to extract NLP features from text data regarding cryptocurrency trading
- Investigated unsupervised learning techniques for extracting sentiment data in real time from online forums

Teradata June 2017 - September 2017
Software Engineering Intern

- Technologies used: Scala, SBT, Java, Maven, Teradata SQL, AWS, Python, TensorFlow, Flask
- Developed open source Spark-Teradata connector forked from Databricks connector for AWS Redshift in Scala
- Designed and implemented Teradata stored procedures in Java to mimic Redshifts UNLOAD and COPY using S3
- Improved training methodology and architecture of deep learning time series model used internally

RESEARCH

Learning From Discriminative Feature Feedback with Professor Sanjoy Dasgupta (UCSD)

- Implemented a novel algorithm proposed by Sanjoy Dasgupta for learning a subclass of DNF boolean formulas
- Designed new datasets and interactive learning experiments to validate theoretical findings
- Accepted, **NeurIPS 2018** in Montréal, Canada

Small Molecule Accurate Recognition Technology with Professor Gary Cottrell (UCSD)

- Published, **Nature Scientific Reports 2017**:
- “Small Molecule Accurate Recognition Technology (SMART) to Enhance Natural Products Research”
- Analyzed performance of deep learning system for use in natural products research and improved the model
- Best Spotlight Presentation at **Applied Machine Learning Days 2018** at EPFL in Lausanne, Switzerland

Soft Purity with Professor Gary Cottrell (UCSD)

- Developed a novel loss function for clustering based on the purity measure
- Proved that the loss function approximately optimizes the purity measure, which cannot be directly used as a loss
- Experimentally validated the loss used in a convolutional neural network trained on images of handwritten digits

TECHNOLOGIES AND SKILLS

Competent: Python, TensorFlow, Java, Scala, C/C++, PyTorch, Unix, AWS
Familiar: SQL, JavaScript, Node.js, OCaml, Maven, Gradle, Docker, Matlab/Octave