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, **Major GPA:** 3.9
MS/PhD Computer Science, pending acceptance: September 2019 -
Courses tutored: DSC 10 (Principles of Data Science), DSC 20 (Data Structures and Python)

EXPERIENCE

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
· Investigated feature extraction algorithms to preprocess image data for use with the DFF algorithm
· Accepted, ***NeurIPS 2018*** in Montréal, Canada

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

· Submitted, ***ICLR 2019*** (under review):
· "Using Deep Siamese Neural Networks to Speed Up Natural Products Research"
· Published, ***Journal of Nature Scientific Reports***:
· "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