Nicholas Roberts

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EDUCATION

University of California San Diego, La Jolla, CA
B.S. Computer Science, Mathematics minor, **Major GPA:** 3.94, **Expected graduation:** June 2019
Relevant coursework: Neural Networks, Unsupervised Machine Learning, Software Engineering, Algorithms, Data Structures, Introduction to A.I., Recommender Systems/Data Mining, Statistics for Computer Science
Tutor for Data Science 10 (Introduction to Programming)

EXPERIENCE

The Cottrell Lab - Researcher   **February 2017 - Present**
- Submitted, *Journal of Nature Scientific Reports*:
  - "Small Molecule Accurate Recognition Technology to Enhance Natural Products Research"
- Analyzed performance of deep learning system for natural products research with Scripps Institute of Oceanography
- Explored the effects of artificial experimental noise added to the dataset and showed resistance to gaussian noise
- Improved quality of image dataset by identifying and handling noisy outliers using principal component analysis
- Technologies used: Python, Tensorflow, Lasagne, Theano, SciPy, Jupyter Notebook, Matplotlib

Teradata - Software Engineering Intern   **June 2017 - September 2017**
- 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 Redshift's UNLOAD and COPY using S3
- Improved training methodology and architecture of deep learning time series model used internally
- Implemented system for updating the time series dataset and fine tuning the deep learning model
- Technologies used: Scala, SBT, Java, Maven, Teradata SQL, AWS, Python, Tensorflow, Flask

Skqrl - Software Engineering Intern   **June 2016 - December 2016**
- Developed web crawler to compile needfinding and product data using Scrapy and Selenium
- Designed and implemented an extensible product search solution designed to handle future user search needs
- Technologies used: Python, Scrapy, Selenium, Django, MySQL, JavaScript

ModSpot - Software Engineering Intern   **January 2016 - March 2016**
- Implemented new user account, edit profile, and login designs in Objective-C for iOS application
- Refactored analytics code for gathering statistics on app usage, helping designers make more informed choices
- Technologies used: Objective-C, Cocoa Touch, Flurry Analytics

PROJECTS

RobotDoesX - Deep neural network system that learns from YouTube videos to produce YouTube content
- Built and trained a deep LSTM model using Keras and Tensorflow trained on YouTube transcripts
- Designed a storage scheme for parallel training checkpoints using RethinkDB for real time updates
- Technologies used: Python, Keras, Tensorflow, RethinkDB, Jupyter Notebook, Matplotlib

Uncertaintyscript - Scripting language and interpreter for quantum information simulations (HackTech 2016)
- Designed and implemented parser and lexer to use Bash-like syntax for quantum bit operators
- Developed a REPL command line interface for running Uncertaintyscript simulations in a Unix shell
- Technologies used: Scala, Gradle, ScalaNLP Breeze

Graph Speak - Chatbot for graphically learning common language patterns
- Designed and implemented a probabilistic graphical model for parsing and generating natural language
- Developed dynamic front-end web interface for conversing with the Graph Speak model
- Technologies used: Java, Google App Engine, Google Cloud Datastore, HTML/CSS, Javascript

TECHNOLOGIES AND SKILLS

Competent: Python, Java, Scala, C/C++, Git, Tensorflow, Unix, HTML/CSS, AWS

Familiar: SQL, JavaScript, Node.js, OCaml, Agile, Maven, Gradle, Docker, Matlab, Objective-C