Cory Pruce

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Education

Carnegie Mellon University **Pittsburgh, PA - Mountain View, CA**

Master of Science in Information Technology, GPA: 3.34, Boeing Scholar, INI Scholar *May 2014–December 2015*

Coursework: Machine Learning, Packet Switching, Cloud Computing, Mobile Security, Software Reverse-Engineering, Computer Systems, Cyber Security Seminar, Web/Browser Security, Applied Information Assurance, Information Security, Managerial Economics, Business Management

Pitzer College, Pomona College track **Claremont, CA**

Bachelor of Arts in Computer Science, GPA: 3.01, Pitzer Grant Scholar *August 2010–May 2014*

Coursework: Algorithms, Data Structures, Operations Research, Distributed Systems, Computer Networks, Statistics, Number Theory & Cryptography, Computability & Logic, Programming Languages, Discrete Mathematics, Software Development

Skills

Languages: Python, C, Java, x86/x64

Data/Markup: IPython/Jupyter, JSON, XML, LaTeX, HTML, CSS **Natural Languages**: *Chinese* - Intermediate

Experience

Parallel Machines **Sunnyvale, CA**

Machine Learning Software Engineer *June 2017–Present*

Juniper Networks **Sunnyvale, CA**

Software Engineer II *March 2016–Present*

- Identified a multi-million/yr reduction in maintenance costs (without taking into consideration opportunity costs) by automating the triaging process. Designed the data analysis, presentation, ETL, feature engineering, and prediction model pipeline for realizing the potential. Found SVM's with TF-IDF to outperform Logistic Regression, Multinomial Naive Bayes, Chi2, and RandomForests. Out of thousands of labels, category accuracy, precision, and recall achieved so far are all just above or below 95%, with degrees of separation reduced for the majority of "incorrect" predictions. Using the Wagner-Fischer dynamic programming algorithm, created a personalized variation of the Damerau-Levenshtein distance for category degrees of separation. Utilized the category confidence scores to list the top 5 to improve recommendation robustness, effectively learning to rank.
- Implemented and tested a redundant, persistent storage of MAC address tables for high-availability, performance-critical core network gear. Allows for dynamic allocation and a theoretically infinite number of addresses. Imperative, highly-demanded feature from customers.
- Improved the robustness, performance, and logging of a kernel tracing tool. Adapted to support all deployed architectures (x86, amd64, arm, arm64, octeon, mips, powerpc). Added functionality to verify structure integrity and give informative reporting if corrupted.
- Solved several customer-facing and critical problem reports.

Kaggle **Online**

Competitions Contributor *January 2017–Present*

- Two Sigma Financial Modelling Challenge: Added leave-one-out cross-validation to a ridge (L2) regressor in order to mitigate overfitting.
- Google Cloud & Youtube Video Understanding Challenge: Experimenting with Google Cloud and the video-level models using Tensorflow.
- Intel & MobileODT Cervical Cancer Screening: Begun kernel for image feature selection using OpenCV k-means clustering unsupervised learning, basic and adaptive thresholds with contour visualizations, and hue ranges to create cropping masks for a given cervix image. Found non-aggressive, generalizable solution for black borders and some instruments by using the max perimeter of bounding boxes formed through finding contours. Researching how to apply Histogram of Gradients descriptors.

SLAC National Accelerator Laboratory - Google **Menlo Park - Mountain View, CA**

Graduate Research Assistant *August 2015–December 2015*

- Developed a framework and dashboard for Powernet, which brings manageability, scalability, reliability, homogeneity, security, and performance to the electrical grid.
- Implemented a persistent object-based storage schema for homehubs and time-series price/power data.
- Displayed real-time data in set interval D3 charts.
- Created a C++ phase-difference test that checks x-intercepts for an Arduino voltage monitor.

Carnegie Mellon University **Pittsburgh, PA - Mountain View, CA**

Packet Switching Teacher's Assistant *August 2015–December 2015*

- Mentored students and graded papers, homeworks, and projects.
- Introduced Piazza Q&A to the course, which was well-received.
- Clarified MPLS/GMPLS, ATM, SONET, Switching Fabrics, Queueing, Scheduling.

NYIT School of Engineering & Computing Sciences **New York, NY**

REU Fellow: Cryptography *June 2013–August 2013*

- Project specifically targeted cryptography for resource-limited devices.
- Implemented in C++ the setup and verification phases of a resource-conscious cryptographic protocol.
- Used an optimized implementation of operations over the finite field GF(256).