Justin Clark

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Education & Relevant Graduate Coursework (With Grades)

B.S. in Business Analytics w/ Dual Concentration in Marketing from University of Tennessee, Knoxville (Fall '16)

M.S. in Computer Science w/ Concentration in Data Science from University of Tennessee, Chattanooga (Spring '19)

MATHEMATICAL STATISTICS (A)	**PRINCIPALS OF DATA ANALYTICS (A)**	**APPLIED STATISTICAL METHODS (A)**
ADVANCED COMPUTER NETWORKS (A)	**MACHINE LEARNING (A)**	**ALGORITHM ANALYSIS (A)**

Skills

PYTHON, C++, MATLAB, R, GO	**A/B TESTING (HYPOTHESIS TESTING)**	**SQL DATABASES**
AGILE DEVELOPMENT (GIT, SCRUM, ...)	**CONVEX OPTIMIZATION (CVXPY)**	**PROCESS AUTOMATION**
STATISTICS & PROBABILITY	**FEATURE ENGINEERING**	**MACHINE LEARNING**
LINUX & UNIX	**COMMAND LINE TOOLS (VIM, BASH, ...)**	**SIMULATION**

Significant Experience

DATA SCIENTIST | SONICCLOUD (JULY 2017-PRESENT)

- Build automated and ad hoc dashboards and reports with Google Apps Script, Redash, Postgresql and Python.
- Perform statistical analyses on customer usage and retention data (hypothesis testing, Monte Carlo simulation).
- Predict customer churn based on previous usage and company engagement (e.g. push notifications).
- Develop proprietary hearing score for customers to more concretely grasp their level of hearing loss.
- Work with a remote team spread across the globe with constant and clear communication through Slack.
- Create automated marketing tools like social media scrapers and bots to optimize customer engagement.
- Support and build ETL pipelines in our backend code base (Golang), adhering to agile management practices (Stash, Jira, Confluence).

OPERATIONS LEAD AND CO-FOUNDER | ALPHA SOUTHERN CAPITAL (SPRING 2016-PRESENT)

- Maintain database server on AWS RDS for backtest historical data as well as operationally critical data (log files, order execution details, broker API logs, etc.). Database has been migrated from Postgresql to MySQL.
- Assist CIO in strategy development from a practical and statistical perspective. Our strategies tend to fall in the broad category of volatility arbitrage.
- Convert backtest scripts to fully functional algorithmic strategies in Python using the Interactive Brokers API. Early iterations of live trading code were written in C++ until converting to Python 3 in 2017.
- Run and monitor algorithmic trading decisions and server load on AWS EC2 instance.
- Maintain a clean code base and agile management practices through Git and code reviews.

CO-HOST | HENCE, THE FUTURE PODCAST (JUNE 2018-PRESENT)

- Co-host a weekly podcast where we discuss a broad range of topics pertaining to the future. Examples include, The Future of Cities, The Future of Food, The Future of Life on Earth, and many more.
- Transcribe podcasts using AWS Transcribe + S3 and run the resulting text file through a bash script so the output is readable to website visitors.
- Research a wide variety of topics which helps me tackle questions from a wide variety of angles.
- Help build the brand and vision for the podcast going forward.
- Links: iTunes, Website.

GRADUATE TEACHING ASSISTANT | UNIVERSITY OF TENNESSEE, CHATTANOOGA (FALL 2017-FALL 2018)

- Taught foundational programming concepts (data structure and algorithms) in Java II course to undergraduates.
- Assisted and graded undergraduate and graduate students in Computer Networking and Advanced Computer Networks, respectively.
- Reinforced my own understanding of fundamental topics in computer science.

FREELANCE PROCESS AUTOMATION (MAY 2018-OCTOBER 2018)

- Automated data entry for a small business using Google Forms and Google Apps Script.
- Built code base to maintain calendar events which are frequently changing due to the nature of the small business.
- Convert an Excel-dominated workflow to Google Sheets and integrate with the other aspects of the business process workflow with Google Apps Script.
- Through these improvements, the small business owner and some employees can now save several hours per week that were previously spent on tedious and manual workflows.

HEAD OF MARKETING AND CO-FOUNDER | CATALYST CYCLING(SPRING 2013-SPRING 2016)

- Assisted in development of innovative carbon fiber cycling products.
- Designed website using Squarespace to optimize for high-quality organic traffic through SEO best practices.
- Last two years of website uptime had an aggregate bounce rate of <4.0% for *us-en* users.
- Built and maintained relationships with carbon fiber product manufacturers in the US.
- Managed all customer service which was praised several times on the popular triathlon forum, slowtwitch.com.
- Created all marketing materials (ads, social media posts, blog posts, videos, photos).
- Developed a referral program where professional triathletes, teams and coaches would partner with us to promote our products and receive a commission in exchange.

ACADEMIC TUTOR | UNIVERSITY OF TENNESSEE, KNOXVILLE (AUGUST 2013 - MAY 2015)

- Tutored eight subject areas: Chemistry, Biology, Math, Economics, Psychology, Statistics, Accounting, and Computer Science.
- Gained experience tailoring my communication to effectively interact with people of diverse attitudes, learning capabilities, and backgrounds.

Major Accomplishments and Awards

TEAM USA IN SPRINT TRIATHLON WORLD CHAMPIONSHIPS | AUCKLAND, NEW ZEALAND (OCTOBER 2012)

- Qualified for the USA National championship in Burlington, Vermont in 2011 because of my status of All-American for my age group at the time (15-19).
- Qualified for the 2012 World Championship due to my performance at the National Championship in 2011.
- Competed in Auckland, New Zealand at the 2012 World Championship against individuals from over 40 represented countries.

THREE-TIME UNIVERSITY OF TENNESSEE HASLAM BUSINESS SCHOOL ENTREPRENEURIAL COMPETITION WINNER

- Won the Boyd Venture Fund and Boyd Venture Challenge in Fall 2013 and Fall 2014 respectively for a total of $22,000 in seed funding for Catalyst Cycling.
- Won the Business Plan Competition in Spring 2014 for $5,000 in seed funding.
- Seed capital was completely reinvested into manufacturing and costs like advertising, website hosting and R&D.

Academic Research

QINLAB RESEARCH ASSISTANT | UTC'S SIMCENTER (AUGUST 2018 - PRESENT)

- Aid in developing an end-to-end system for determining the replicative lifespan (RLS) of budding yeast cells.
- Develop deep learning (convolutional neural networks) models to accurately classify yeast cell images into one of a handful of categories that are then used to determine the RLS of a single cell (*this portion will be my Master's Thesis*).

- Created tutorial for researchers and other users to connect to a remote Jupyter notebook served by a high performance computer cluster at the SimCenter (Github).
- Design a RESTful API system for biologists to send their unprocessed experiment images and get results quickly.

BLOCKCHAIN RESEARCH ASSISTANT | UTC'S SIMCENTER (FEBRUARY 2018 - JUNE 2018)

- Worked under Dr. Anthony Skjellum, the SimCenter research director, to help develop software for a brand new kind of blockchain architecture called *Scrybe* [source: Scrybe Paper].
- The key innovation of the Scrybe blockchain is the lightweight mining algorithm so the blockchain system as a whole is able to scale to larger non-cryptocurrency applications.
- Part of my work also involved learning about the Ethereum blockchain and its smart contract programming language called Solidity.

Writing Samples

ADVANCED COMPUTER ARCHITECTURE (SPRING 2018)

- Final paper: Quantum Computing Architectures (Github link).
- Literature review: Vector & Array Processors, GPUs, Multiprocessors, Multicomputers (Github link).

MASTER'S THESIS

- A Deep Learning Approach to Estimate Replicative Lifespans From Yeast Cells (Link)