AUSTIN MAC

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EXPERIENCE

Media Skill Research Lab   May 2021 - Present
Research Assistant   *Santa Barbara, CA*

- Developed email client simulator (EMPTI) with text prediction to measure user behavior data for analysis (Express, Node.js, OpenAI GPT-3, PostgreSQL, Heroku)
- Repo: `https://github.com/austinmacmath/EMPTI`
- Studying algorithmic bias and bias detection in context of predictive text algorithms
- Co-authoring paper to be submitted to National Communication Association

Roblox   June 2021 - Sept 2020
Software Engineering Intern   *San Mateo, CA*

- Built CLI and HTTP server to restart Nomad jobs (Go, Nomad)
- Added features to a Nomad Node Problem Detector to programatically build Docker images (Go, Docker)

Citadel   March 2021 - June 2021
Software Engineering Intern   *Chicago, IL*

- Deployed SNMP trap receiver on Kubernetes (Docker, Bash, Python, Splunk, Vault, Kerberos, Pagerduty)
- Built a data collector to publish stored procedure outputs to Kafka and consume outputs from Kafka to Clickhouse (Python)
- Created command line tool to suppress PagerDuty Alerts (Python)

Tesla   August 2020 - December 2020
Data Analytics Intern   *Fremont, CA*

- Built ETL data pipeline for predictive analysis of job efficiency using historical weather patterns (Python, Pandas, SciKit-Learn, SQLAlchemy, SQL Server, MySQL, Ansible)
- Built dashboards to flag unusual install jobs, plan capacity, and visualize office jurisdiction (SQL Server, Tableau)
- Automated crew capacity modeling process (Python, Excel)

Roblox   June 2020 - August 2020
Software Engineering Intern   *San Mateo, CA*

- Built monitoring dashboard to track resource usage on container orchestration servers (Hashicorp Nomad), calculate waste, aid capacity planning (Docker, Go, Grafana, SQL Server)
- Built RESTful API on CI/CD with unit & integration testing (CircleCI)
- Open source project repo: `https://github.com/Roblox/rblx_nurd`

EDUCATION

University of California, Santa Barbara   September 2018 - June 2022
Major: Computer Science, Minor: Statistics & Data Science   *GPA: 3.76/4.00*

PROJECTS/RESEARCH

EMPTI
EMPTI (EMail Predictive Text Imitator) is a proof of concept platform used to measure and detect automation bias in the context of text based communication. Built with Express.js, Node.js, Postgres, and GPT-3. Repo: `https://github.com/austinmacmath/EMPTI`

Airbnb Machine Learning
Supervised machine learning to predict prices of Airbnb properties in New York. Random Forests, Bagged/Boosted Models, Radial/Polynomial Kernel SVM, KNN, Regularization, LDA/QDA, Models optimized with K-fold Cross Validation (R).

the drop. (2nd Place at SB Hacks 2019)
GPS location based scavenger hunt game for web, Android, and iOS. Implemented back-end database (Firestore), trigger functions (JavaScript), automated SMS system (Twilio API), scheduled releases (CRON).

Forest Fires Regression Analysis
Regression analysis of Forest Fires data set from UCI Machine Learning Repository. Stepwise regression, model fitting, model transformations, hypothesis testing (F-test, t-test), prediction intervals, residual/normality analysis (R).

Ceramic Classification & Data Cleaning
Classified ceramics based off of variables *Form* and *Group*. Ceramics with conflicting variables were sorted by other factors using machine learning random forests/decision trees (SciKit-Learn, Pandas).

Jar Analysis
In order to sort jars into narrow and wide groups based off of rim diameter and group number, R, Python (Seaborn, Pandas), and Microsoft Access were utilized to perform quantitative data analysis.

PUBLICATIONS

Mac, Austin R. "Don't Get Stuck." *Starting Lines*, 18th ed., Bedford Freeman & Worth, 2019, pp. 145-147.

VOLUNTEERING

UCSB Running Club - President
UCSB Running Club is an entirely student run organization with over 300 registered members. Our goal is to provide an inclusive, welcoming community for runners of all levels. I am responsible for delegating to other officers, organizing practice schedules, coordinating race carpools, applying for race registration discounts, purchasing uniforms and other management tasks.

SKILLS

Languages	C++, Python, Go, SQL, R, HTML, CSS
Tools	LaTeX, Jira, Confluence, Sketch, Figma, Tableau, Git, Docker, Kubernetes