Justin Chang

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Education

BS, Computer Science | University of California, Santa Barbara | GPA: 3.8 *Expected Grad June 2024*

- Undergraduate Coursework: Data Structures, Algorithms, Computer Networking, Machine Learning, Programming Languages
- Graduate Coursework: Scalable Internet Services

Experience

Software Engineer Intern – AppLovin *January 2023 – March 2023*

Data Platform Team: Apache Spark, Apache Airflow, Apache Iceberg, GCP, Jenkins

- Investigated and implemented features for a Data Lakehouse architecture to optimize data storage and query performance
- Initiated migration of Vertica to GCP BigLake which improved performance of hourly and daily file aggregation jobs by 59%
- Designed a metadata layer to track files in Google Cloud Storage to optimize file listings which improved query performance by 22%

Software Engineer Intern – AppLovin *June 2022 – September 2022*

Infrastructure Team: Apache Spark, Apache Airflow, GCP, Jenkins

- Contributed to the design and implementation of an Apache Spark ETL pipeline in Scala to automate the flow of financial data
- Interfaced with Google Cloud Platform (GCP) through Airflow DAGs to manage clusters and run Spark jobs using Dataproc
- Automated Spark executor log manipulation using the GCP CLI to concatenate and store them in a human readable format
- Improved the Slack webhook error notification process by analyzing log files from Google Cloud Storage buckets

Software Engineer – Sei Labs *February 2022 – November 2022*

Engineering Team: Rust, Golang, Node.js, React.js

- Designed and developed a decentralized finance (DeFi) protocol that targeted yield optimization of liquidity providers
- Oversaw the Initial Dex Offering (IDO) which generated over $100 million of governance voting power
- Implemented smart contracts for additional DeFi protocols to handle the trading of perpetual futures and options
- Developed open-source bindings and helpers to support smart contract querying and messaging to the blockchain modules

Software Engineer Intern – AppLovin *June 2021 – September 2021*

Infrastructure Team: Java, Maven, JUnit, MySQL, Jenkins

- Introduced test-driven development to data aggregation projects to identify regressions when interfacing with third-parties APIs
- Set up continuous integration with Jenkins to automatically build, test, and manage Maven artifacts
- Designed and implemented a standardized testing framework to write unit, integration, and regression tests for a third-party data collection service which increased code coverage from 14% to 88%

Research

Undergraduate Researcher – UCSB NLP Group *September 2021 – Present*

ERSP 2021-2022 Cohort: PyTorch, Ruby on Rails, PostgreSQL, MTurk

- Researching topics in natural language processing (NLP) with a focus in Question Answering (QA) advised by Dr. William Wang
- Created a large-scale, challenging QA benchmark dataset that consist of “why” questions, answer, and explanation
- Designed an end-to-end multistep pipeline for collecting and validating data through Amazon’s Mechanical Turk (MTurk)
- Utilized state of the art models such as BERT and GPT-3 as benchmarks to verify the difficulty of the collected data
- Chang et al. *WikiWhy: Answering and Explaining Cause-and-Effect Questions*. ICLR 2023 Oral (Ranked 51/4019, Top 1.2%)

Open Source

Grangel *In Progress*

Spark, Spark SQL, PostgreSQL

- Designed and implemented Spark jobs to clean and analyze a dataset of grade distributions across different courses at UCSB

Monopl.io *January 2021*

Ruby on Rails, React.js, GraphQL, PostgreSQL

- Designed a remake of the Monopoly board game with the intention of offering the option to add custom rules and features
- Utilized polymorphic associations from Active Record in a relational database to distinguish different game tiles
- Updated the client-side game state in real time using WebSockets and GraphQL Subscriptions

Skills

- **Frameworks/Tools:** Airflow, Spark, GCP, Docker, Maven, Jenkins, Git, React.js, Ruby on Rails, Django, Express.js, Phoenix
- **Languages:** Java, Python, Rust, Scala, JavaScript, Ruby, Elixir, C++, HTML, CSS