Shelby Yang

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EDUCATION

The University of Texas at Austin May 2026
Turing Scholar
B.S. in Computer Science, Minor in Economics
Relevant Coursework: Honors Data Structures, Honors Algorithms, Honors Discrete Math, Honors Computer Architecture, Honors Vector Calculus, Linear Algebra, Probability, Intro to Microeconomics, Economic Statistics

SKILLS

Experienced in: Java, Python, C/C++, SQL, R, Golang, Apache Thrift, GraphQL, Microsoft Azure, React, Unit Testing, REST APIs, UNIX, Verilog
Familiar with: Apache Solr, Docker, Kubernetes, Artifactory, Apache Kafka, HTML/CSS, JavaScript

EXPERIENCE

Reddit - *Software Engineer Intern, Search Relevance* May 2024 - August 2024
- Developed "Query Results Comparison System", an internal tool that increased visibility for how a query gets processed throughout Reddit's backend services (Go and Python). Made changes to Post, Subreddit, and Typeahead search pipelines. Changed Thrift schemas, added support for experiment overriding, and unit tested.
- Used React and Javascript to develop the GUI and make HTTP requests. Wrote GraphQL queries and modified schemas to hydrate the candidate IDs returned with additional fields like post titles and subreddit names.
- Enabled the comparison of query behavior based on various input parameters, such as experiment variants, safe search, and user ID, providing detailed responses beyond standard Reddit search capabilities.

JERA Americas - *Software Engineer Intern* June 2023 - August 2023
- Implemented ETL database system using Snowflake's continuous data stream (Snowpipe) for select power plant sites. Empowered operational teams with live analytics and enhanced decision-making through a dashboard.
- Developed an automated Python scraper using Microsoft Graph API for Microsoft Teams' out-of-office events. Processed data via Azure SQL and deployed the web app on Azure Function App, improving IT transparency and payroll accuracy.

PROJECTS

Web Crawler and Search Engine (Java)
- Developed stand-alone web crawling application that gathers data and quickly indexes a local corpus.
- Created an efficient query engine that is able to execute searches on data gathered by the web crawler.
- Used reverse polish notation algorithm for processing queries, nested hashmaps, big O notation, and other data structure principles. Optimized search functionality using TF-IDF and cosine similarity algorithms.

RISC CPU Development (Verilog)
- Designed and implemented a 5-stage pipelined CPU in Verilog, incorporating stages: fetch, decode, execute, memory, and write back. Handles control, data, and resource hazards.
- Integrated the Tomasulo algorithm into the design to optimize instruction scheduling and increase parallelism.

LEADERSHIP & COMMUNITY INVOLVEMENT

UTCS Directed Reading Program (DiRP) - *Administrator* August 2022 - Present
- Led DiRP, an organization aimed at promoting undergraduate engagement in computer science research.
- Orchestrated mentor-student pairings for diverse project and reading groups.
- Oversaw a membership of 500+, managing 17 distinct research groups spanning areas such as architecture, graphics, robotics, machine learning, systems, and theory.

Texas Undergraduate Computational Finance - *Analyst* January 2023 - Present
- Wrote biweekly market analysis reports highlighting market trends, significant news, and equities of interest, providing actionable investment insights to peers and alumni.
- Presented investment strategies using quantitative techniques such as linear regression, sentiment analysis, and factor models. Strategies focused on predictive modeling for stock performance and risk management.