Cameron Beck

Software Engineer
Bachelor of Science
University of Connecticut

cambeck366@gmail.com
+1-860-830-7680
LinkedIn
GitHub

Skills

- **Programming Languages**: Python, TypeScript, JavaScript, SQL, HTML / CSS, Bash
- **Libraries & Frameworks**: React, Redux, Node.js, Express, Sequelize, Flask, SQLAlchemy, Selenium, Pytest, Mocha
- **Other Professional Skills**: Agile, AWS, Docker, Git, Linux, MongoDB, PostgreSQL, REST APIs, Redis, WebSockets

Projects

- **Browser Extension: StructyHub** ***Latest***
  Automatically sync your Structy submissions with GitHub (GitHub API, JavaScript, OAuth2) GitHub
  - Developed and published an open-source browser extension on the Chrome Web Store. StructyHub allows programmers to bolster their portfolios while they hone their data structures & algorithms skills
  - Used the OAuth2 protocol, GitHub REST API, and JavaScript Web APIs to detect test submissions, assess correctness, and sync with GitHub in less than 500ms - also maintaining an ultra-light memory footprint (<24 MB)

- **Full-stack Web Application: Smack** ***Site***
  Slack-inspired live messaging (AWS S3, Docker, Flask, PostgreSQL, React, Redis, Redux, SQLAlchemy, Socket.IO) GitHub
  - Utilized WebSockets and Redis to facilitate high performance real-time, bidirectional communication between users, employing graceful disconnection strategies for connection management to promote scalability
  - Leveraged the OAuth2 protocol to allow users to easily log in or register. Adhered strictly to OWASP standards for security
  - Integrated AWS S3 storage services using boto3, enhancing file and media management capabilities in message attachments

- **Inter-Chain Arbitrage Swapping Engine (IN-CASE)**
  High-frequency, multi-chain arbitrage trading made simple (MongoDB, NodeJS, pm2, TypeScript, WebSockets)
  - Designed and engineered a microservices-based, event-driven arbitrage trading engine to capitalize on price differentials of assets across numerous major cryptocurrency chains, including Ethereum, Solana, and Polkadot
  - Programmatically identified and executed up to 1200 profitable trades per day by applying graph-theoretically optimized asset & swap routing across decentralized exchanges, minimizing network fees and maximizing profits
  - Implemented continuous integration using GitHub Actions, including automated unit testing to ensure reliability and functionality of the live production codebase

- **Full-stack Web Application: Seddit** ***Site***
  The front page of the Internet (AWS S3, Docker, Flask, PostgreSQL, React, Redux, SQLAlchemy) GitHub
  - Created responsive CSS and a device agnostic UI with React, resulting in greater accessibility across browsers and devices
  - Improved application stability by using Postman for comprehensive API testing and Selenium for E2E testing
  - Containerized a robust and automated testing suite in Docker, making testing less error prone and more rigorous

Experience

- **University of Connecticut - Department of Physiology and Neurobiology** *Jul 2021 - Aug 2022*
  Computational Research Assistant Storrs, CT, USA
  - Developed a computational pipeline, primarily using Python and R, for the systematic aggregation, processing, and visualization of large-scale single-cell RNA-seq datasets, evaluating differential expression and pseudotime cell trajectories
  - Acted as key liaison for implementing interdisciplinary project needs, bridging gaps between diverse cross-functional teams
  - Achieved a 30% reduction in analysis run times through strategic optimization (e.g., vectorization, caching, data-structure augmentation), leading to substantial cost savings and enhanced workflow efficiency by minimizing HPC resource usage

Education

- **University of Connecticut** *Aug 2016 - May 2021*
  Bachelor's of Science, Molecular and Cell Biology Storrs, CT, USA