Tristan A. Sweeney

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Professional Experience

DUST Identity
Newton, MA

STAFF SOFTWARE ENGINEER — *Oct 2023 — Present*
- Enabled customers to create DUST mobile apps with an SDK for DUST's custom scanner
- Improved developer mobility across web and mobile by migrating apps from Swift to React Native
- Derived real-time events from legacy applications with Kafka, Debezium CDC, and KSQL ETL
- Demonstrated "verified delivery with DUST" concept by developing Shopify App integration

SENIOR SOFTWARE ENGINEER — *Aug 2022 — Oct 2023*
- Reduced scope by replacing in-house auth with standardized OAuth2 and OIDC IAM Infrastructure
- Accelerated development by rearchitecting legacy monolithic codebase into well-defined services
- Migrated authorization and business rules from in-code to OPA (Open Policy Agent) documents
- Eliminated deployment mishaps by migrating applications to be deployed and managed in Kubernetes
- Simplified authentication management by publishing open-source python packages for customers
- Mentored developers and interns in Python, FastAPI, RESTful API design, and HTTP best practices

SOFTWARE ENGINEER — *Jan 2021 — Aug 2022*
- Implemented offline data transfer between air-gapped deployments of company services
- Led adoption of modern python tooling, linting, autoformatting, and package management

Amazon
North Reading, MA

SOFTWARE DEVELOPMENT ENGINEER — *May 2019 — Jan 2021*
- Achieved safety certification of embedded applications to IEC 61508 and IEC 61784 standards
- Accelerated development by creating a library of certified data structures and asynchronous primitives
- Enabled collision avoidance by developing high-bandwidth I/O drivers to transmit video streams
- Implemented access control for airline cargo hubs with embedded application for gate control boxes

SOFTWARE DEVELOPMENT ENGINEER (CO-OP) — *Jan 2017 — Sep 2017*
- Automated calibration of object detection system combining linear rail and robotic arm fixture, controlled with a LabView / TestStand GUI and a set of custom software and firmware drivers
- Improved LIDAR camera enclosure by developing visualizations from data to identify ambient noise
- Created benchmark data for obstacle-detection algorithms, using raycasting to generate synthetic data

Cambridge Consultants
Boston, MA

SOFTWARE ENGINEER (CO-OP) — *Jul 2018 — Sep 2018*
- Delivered firmware for wireless headphones, using Bluetooth inmregular, low-energy, and music profiles
- Enabled in-office training of ML and AI workloads by establishing a GPU enabled Kubernetes cluster
- Developed AI foosball bot for sales demos, integrating hardware, firmware, and python interfaces

NVIDIA
Santa Clara, CA

COMPUTE ARCHITECTURE ENGINEER (CO-OP) — *Jan 2016 — Sep 2016*
- Forecasted demand for GPUs by modeling performance for popular deep learning architectures
- Eliminated stale-data confusion with excel macros to auto-update spreadsheets from databases

Education

Northeastern University
Boston, MA

M.S. IN COMPUTER ENGINEERING (SYSTEMS AND SOFTWARE) — *Sep 2017 — May 2019*

B.S. IN COMPUTER ENGINEERING — *Sep 2014 — May 2019*

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Expertise

Programming	Python, JavaScript, TypeScript, C, C++, Rust, Assembly, Bash
Web	React, ReactPDF, Vite, Remix, React Router, React Admin, Prisma, Figma
Mobile	React Native, Expo, Tamagui, Capacitor
Cloud	AWS, CDK, Docker, Kubernetes, ArgoCD, Ansible
Fundamentals	Git, Linux, CI/CD, Data Structures and Algorithms, Package Distribution
Networking	TCP, UDP, IP, HTTP, RAFT consensus, IEC 61784 safety communication
Embedded	IEC 61508 safety compliance, I/O drivers, RTOS, libC, POSIX