

T. Shane Buckley

[Software Engineer]

tshanebuckley@gmail.com | tshanebuckley.github.io | github.com/tshanebuckley

Ambitious software engineer with 5+ years of experience. Proactive and highly motivated self-learner. Specialties include software development, data stewardship, and expertise in delivering complex functional requirements for science-focused clients. Primarily experienced in collaborating with stakeholders in the biological research and energy sectors.

Work Experience

Software Engineer (Subcontractor)

2022 – 2025

Bettis Atomic Power Laboratory, West Mifflin, PA

Engineered software that supports the Naval Nuclear Propulsion Program's maintenance of chemistry.

- Contributed to and delivered multi-year projects producing C# desktop chemistry applications for operating steam generators and nuclear reactors aboard US Navy aircraft carriers and submarines.
- Created a SQL query builder on top of Dapper that improved developer experience for database operations and reduced bugs produced by implementing raw sql queries as strings.
- Architected and built a reactive full-stack framework from scratch based on MVVM, DDD, and Signals/Effects.
- Improved long-term code maintainability and consistency for meeting functional requirement delivery estimates by creating software abstractions for the development team.
- Extended ML.NET based on the R dplyr package for DataFrame manipulations including time series and ETL/ELT tasks.
- Integrated and extended Entity Framework for schema and complex data migrations on client applications.
- Created a C# client SDK for an internal, proprietary protocol over TCP.
- Lead the team in implementing SOLID practices and in identifying use cases for Software Design Patterns.
- Maintained a US Department of Defense (DOD) Secret Clearance (active).

Research Programmer

2020 – 2022

University Of Pittsburgh Medical Center (UPMC), Pittsburgh, PA

Task-automation and software/technical support to an fMRI research team of 10+ coworkers studying BPD.

- Operated data pipelines using the University of Pittsburgh's HPC cluster.
- Maintained a fork of DAX, an open-source tool, to schedule nightly jobs for pulling fMRI data from an XNAT server.
- Created custom CLI tools in Python and R for assessing data quality and completeness.
- Maintained a Linux environment on the HPC cluster for researchers to perform fMRI work.
- Implemented a three-point backup solution for lab research data and participant medical data.
- Containerized pipelines with Docker and Singularity to be executed in a reproducible fashion.
- Developed a dashboard for viewing results of at home behavioral tasks, EEG data, and questionnaires.

Education

University Of Pittsburgh, Pittsburgh, PA

Bachelor of Science, Bioinformatics (2020)

Duquesne University, Pittsburgh, PA

Associate of Science Degrees in Computer Science, Chemistry, & Mathematics (2018)

Skills

Languages: C#, SQL, Python, R, Bash, Powershell, JavaScript, Typescript, Rust, C++, Java, MATLAB

Tools: React, Blazor, Entity Framework, Dapper, Tailwind, Anaconda, Docker, Apptainer, Git, WASM, Slurm, Docusaurus, Nix, Flox

SWE Principles: Data Structures, Design Patterns, Domain-Driven Design, Test-Driven Development, Event-Driven Design, Object-Oriented Programming, Dependency-Injection, Microservices, Functional Programming, Clean Architecture, SOLID Principles

Databases: SQLite, Postgres, MySQL, XNAT, REDCap, Microsoft Access, MongoDB, SurrealDB

Operating Systems: Windows, Unix/Linux, Mac