View at baileywickham.com

Bailey Wickham

Side Projects

fuzzer Go

A markov chain based fuzzer written in Go which generates new data based on an input corpus to test applications. Supports multiple markov chains and test corpuses in parallel.

cont C

A minimal container implementation in C. Uses namespaces, cgroups, overlayfs to create and manage multiple containers.

runner Go

A cli runner for go programs which uses the internal reflect library to automatically convert function arguments.

Metaclasses Python

Uses python metaclassing to generate Python classes from CSV files at runtime.

More on Github

Education

09.2018 – 06.2022

California Polytechnic, SLO

- BS in Mathematics (Pure focus) and Computer Science, 3.5 GPA
- Minoring in Chinese
- Graduate courses in Field Theory, Point-Set Topology, Algebraic Topology, Programming Languages

Worked with Masters student under Dr. Theresa Migler to characterize power networks from a graph theoretic approach. Studied graph networks and built a framework for ingesting data.

Attended Simple Group, a research seminar with a focus on algebraic topics.

Attended programming languages reading group under Dr. John Clements and Dr. Aaron Keen. Discussed current topics in programming languages and type theory.

Experience

01.2021 – Present

Amazon

San Luis Obispo, CA

Junior Developer at Amazon SLO on Indie Publishing Experience team. Part time intern during the school year, full time intern over the summer.

Summer 2020 – Winter 2021

Frost Undergraduate Research (Poster)

Frost Research, Cal Poly

Participated in undergraduate research in Pure Mathematics under Dr. Eric Brussel. We studied a moduli space of embeddings of complex planes into the quaternions. We then generalized our approach over the generalized quaternions, classifying the embeddings of commutative subalgebras, related affine varieties, and conjugacy classes. We also studied H from a category theoretic perspective. A paper will be published Fall, 2020.

09.2018 – 12.2020

Cal Poly CubeSat Lab

PolySat, Cal Poly

Led development and deployment of CPCL infrastructure to AWS (~5 machines). Wrote Cloudformation templates, ansible scripts to manage deployment. Deployment met Cal Poly IT security standards.

Mission Lead of ExoCube II (Spring 2019-Summer 2020), a 3U small satellite as part of NASA's ELaNa XX program. Led team of ~20 through build, testing, and predelivery phase of the spacecraft. Worked with NASA Goddard, Virgin Orbit,

Contact

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Personal

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Running, Surfing

Publications

I. Gallagher, A. Hasse, B. Wickham, E. Brussel. Poster at MAA Golden Session Spheres of Planes in the Generalized Quaternions

TriSept to organize delivery of spacecraft. Mission funded by NASA, NSF.

Developed Embedded Flight Software for CPCL including commits to buildroot, IPC library, beacon and XDR parser.

Summer 2017, 2018

Cascade Custom Software

Portland, OR

Junior developer at Cascade Custom Software. Developed full stack web applications for third parties using Angular/Vue, Typescript, SQL Server. Assisted in migration of ~5TB SalesForce production SQL server for third party.

12.2016 – 09/2019

Melloh.io

Portland, OR

Started a company in high school to create, host and manage websites for small businesses. Worked with clients to create content and manage online presence. Used Django, Python, Apache/Nginx, Wordpress.