

# Elaine Cubit



ecubit.dev



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elliottcubit

## RELEVANT SKILLS

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- Go Programming
- GCP
- Google Cloud Pub/Sub
- Google Cloud Bigtable
- Postgres
- Jira
- Unix
- L<sup>A</sup>T<sub>E</sub>X
- Git (Github, Gitlab)
- Agile development
- Apache Beam
- Gitlab CI
- Docker
- gRPC microservices
- Code review
- Bash
- X509 certificates
- Certificate transparency
- Software fingerprinting
- Terraform
- Helm
- GitHub actions
- Kubernetes
- Google Spanner
- Regular expressions
- Scala
- Protobuf

## EXPERIENCE

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### Censys

*Software Engineering Intern*

*Software Engineer*

*Senior Software Engineer*

**Ann Arbor, MI**

*May 2020 - May 2021*

*May 2021 - May 2023*

*May 2023 - Jun 2025*

- Implemented L7 scanner and parser for 8 network protocols
- Built a YAML-based method for specifying scan probes and associated information that allowed the team to implement 60 new network protocols in only three days
- Developed data pipelines and services for storing and searching bulk port scan data (2TB/day)
- Spearheaded implementation of greenfield data pipeline for collecting and storing 17 billion x509 certificates
  - gRPC microservices written in Go, running in Google Kubernetes Engine
  - Services communicated asynchronously with Google Pub/Sub
  - Mirrors and validates new entries to certificate transparency logs in real time
  - Indexes certificates for search using Elasticsearch
  - Certificate validity is verified and updated in the index daily
- Created a central architecture diagram for services developed by the team (and later, the company)
- Automated analysis of daily dataset downloads, alerting on statistical anomalies such as autonomous systems in particular geographic regions entirely blocking our scanning
- Designed and maintained template-based framework for efficient software, hardware, and OS labeling
  - Highly specialized tool similar to nuclei-templates
  - Capable of processing 200,000 records per second with <50ms p95 latency
  - Executes thousands of regular-expression based fingerprints for each record
  - Uses a custom DSL allowing simple access to deeply-nested record fields and templating language
  - Created and maintained documentation and support materials for team of researchers using the tool
  - Fielded feature requests from the team, implementing those that were feasible without compromising on the primary product timeline
- Integrated popular open-source fingerprinting frameworks such as Rapid7 Recog, Nuclei-Templates, Wappalyzer, and Vulncheck into the product
- Worked side projects with research and data analysis teams to build custom tooling to improve their operating efficiency

## PUBLICATIONS

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### Censys: A Map of Internet Hosts and Services

*Zakir Durumeric, Hudson Clark, Jeff Cody, Elliot Cubit, Matt Ellison, Liz Izhikevich, and Ariana Mirian*

**ACM SIGCOMM Conference**

*Sept. 2025*

## EDUCATION

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### Purdue University

*Bachelor of Science in Computer Science*

**West Lafayette, IN**

*Aug 2017 - May 2021*