# Johan Yim
## Software Developer

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## Experience

**2024-05**
**Present**

### Software Developer BG Automotive

- Implemented stateless, secure authentication using `JWTs` stored in HTTP-only cookies, with access and refresh token rotation for session management.
- Implemented HTTP middleware in `Rust` using `Redis` as an intermediary cache layer, Server-Sent Events, and frontend Virtualization/Windowing to handle payloads 600 times larger.
- Developed a silent background process that monitors key presses and recognizes barcode syntax, triggering image capture from the warehouse CCTV system.
- Applied systems programming concepts, including mutex-based synchronization, to prevent race conditions and manage concurrent write operations.
- Used `cron`, the GNU coreutils, and `git` to create an automated deployment pipeline for various automated services.
- Deployed 10 containerized cloud applications optimized for resource efficiency, achieving reliable operation on a single low-tier cloud instance.

**2024-03**
**2024-05**

### Volunteer Data Assistant Bath Royal Literary and Scientific Institution

- Used text-manipulation tools from the GNU coreutils such as `awk` and `sed` to process and clean existing tabular data.
- Interfaced with the `xlsxwriter` C library to programmatically generate non-trivial excel spreadsheets, such as spawning charts and extracting/including VBA macros.

## Projects

### Structure-Preserving Encryption and Decryption johanyim/spead

- Improved user experience by enforcing command-line flag validation to prevent misuse.
- Distributed CPU-bound parallel workloads to several threads to reduce the amount of time taken to encrypt and decrypt.
- Measured the performance using benchmarks using the criterion crate writing performance tests
- Implements a module for response caching, which can be used in a variety of related projects

## Education

**2019-09**
**2023-05**

### Computer Science MComp (Hons) University of Bath

Degree Class awarded: 2:1 - Functional Programming (82%) - Machine Learning (77%) - Statistics for Data Science (73%) - Cryptography (78%) - Data Structures and Algorithms (82%) - Computer Systems Architecture (82%)

**2017-09**
**2019-05**

### International Baccalaureate (iB) King George V School

39 points overall - HL Maths (7) - HL Physics (7) - HL Computing (5)