Bryan Hitchcock

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Experience

Microsoft: Software Engineer — Jun 2020 - **Present**

- Azure Storage XStore stream layer (**Present**)
- Azure Consumption and Cost Management API
  - Reduced Azure Pricesheet download from ~**80s to** ~**4s** using various optimizations (e.g., pipelining batches of Redis keys).
  - Improved protobuf decompression performance by ~**200%**, making all data-oriented APIs faster.
  - Eliminated multiple deadlock scenarios running in production which reduced the number of killed nodes.

MaxCogito: Software Engineer, Intern (CSE 498 - Senior Capstone Project) — Jan 2020 - Apr 2020

- Created cloud microservices for analyzing and identifying content flowing through clients' email servers, potentially saving an enormous amount of money in non-compliance fees (e.g., GDPR violations).
- Designed and implemented robust REST API microservices in **Spring Boot** using **Java** for all administrative and processing-related tasks along with relevant PostgreSQL schemas.
- Developed an administrative website using Angular with TypeScript.
- Deployed back-end microservices on **AWS** EC2 instances connected via a discovery service and an API gateway.

Michigan State University: Compilers Teaching Assistant — Aug 2019 - Dec 2019

- Helped ~150 students design and implement their compilers in **Python** that stage through lexical, syntactic, and semantic analysis, intermediate language generation, optimization, and target code generation.
- Taught relevant CS theory: finite & pushdown automata, context-free grammar, regex, abstract syntax trees.

BS&A Software: Software Engineer, Intern — May 2019 - Aug 2019

- Developed an internal **TypeScript Angular** web app used by all ~180 employees to facilitate real-time collaboration, **saving** ~**$4,000/month** in Trello costs.
- Implemented the back-end RESTful API and web socket infrastructure using **C# ASP.NET Core**.
- Created robust integration testing infrastructure, resulting in ~95% code coverage.

Projects

Course Sniper — Apr 2019 - May 2019

- Created a **C#** WPF desktop application and an IoT CLI tool that automatically enrolls in planned courses whenever there's an available spot.
- Deployed IoT application targeting Michigan State University's scheduling system on a Raspberry Pi 3 B+.
- Enrolled in 4 "full" courses, potentially saving thousands of dollars in tuition costs.

Skills

- **Languages**: Python, C#, JavaScript/TypeScript, C/C++, Java, Rust, SQL
- **Libraries & Frameworks**: OpenMP, MPI, Angular, Vue, Node.js + Express.js, NestJS, GraphQL, TypeORM, RxJS, Flask, ASP.NET Core, SignalR, Entity Framework Core, Spring Boot, Spring Cloud
- **Other**: Git, SOLID, Agile/Scrum, Linux, pytest, xUnit, Jest, Azure, Azure DevOps, Amazon Web Services

Education

Michigan State University: Computer Science, B.S. | GPA: 3.8/4.0 — Grad Date: May 2020

- MSU Federal Credit Union Praxis Award 2020 for most technically challenging Senior Capstone Project.
- *Course Electives: Advanced C++* ***(6 students invited)****, Biometrics & Pattern Recognition, Operating Systems, Distributed Computing, Computer Networks, Algorithm Engineering, Compilers & Interpreters, and Databases.*