


# Alexander Shah

## Software Engineer

 zandersshah

 alexander.shah@uwaterloo.ca

 zandersshah.me

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**Languages**    Java, C/C++, Python, Scala, JavaScript, HTML, CSS, SQL, MATLAB

**Tools / Tech**    Git, Bash, PostgreSQL, ReactJS, jQuery, Flask

**Experience**    **PaveAI | Software Engineer** | Python, Javascript, SQL | *May 2017 - Sep 2017*

- Designed an async network with Celery and Redis to distribute tasks across servers
- Replaced key-value store with PostgreSQL JSONB resulting in a 10x speed increase
- Worked on PostgreSQL database, using Alembic for migrations and SQLAlchemy for ORM
- Implemented Linear Optimization to extract the most critical data for clients

**Richmond Hill HS | Webmaster** | JavaScript, SQL | *Sep 2015 - Jun 2016*

- Linked ticket sales to MySQL database to keep track of attendance at events
- Developed software to organize school-wide games

**Projects**    **Slime Farming Simulator** | Java

- Designed a multithreaded game server and client with Java Sockets
- Incorporated AABB for collision detection and double-buffering to reduce screen tearing
- Implemented procedural map generation using a tree model as well as pathfinding AI

**SsSnake** | JavaScript

- Built a voice controlled snake game using the p5.js client side animation framework
- Utilized p5.speech voice recognition to obtain directional inputs

**SEware** | C, TI Tiva, Orbit Boosterpack

- Modelled all object interactions using classical mechanics and linear algebra
- Communicated with I/O components such as OLED display, accelerometer, and LEDs

**Sodasplosion** | Java

- Developed a Bomberman clone with both single-player versus AI and multiplayer modes
- Designed AI to path towards the closest safe zone with a Manhattan distance heuristic

**Education**    **University of Waterloo** | *2016 - 2021*

- Candidate for Bachelor of Software Engineering
- Dean's Honour List (91.6% CAV)

**Coursera - Stanford University Machine Learning** | MATLAB | *2016*

- Implemented Linear & Logistic Regression, ANN, k-NN, and SVM for weekly assignments
- Discussed real world applications such as anomaly detection and recommender systems

**Awards**    - Top 1% HackerRank algorithms contest leaderboard | *Jun 2017 - Present*

- Top 30 Canadian Computing Olympiad Qualifying Round | *Feb 2016*
- Platinum Division USA Computing Olympiad | *Jan 2016 - Present*
- DECA International Team Marketing Finalist | *2014 - 2016*