

# BANIN ABRAR

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## SUMMARY

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- Python, NodeJS, C++, SQL, React, Perl; AWS, Heroku, Nginx, MongoDB, PostgreSQL
- Experience with systems design, application deployment, backend development, optimization

## EXPERIENCE

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### JANA Solutions

Aurora, ON

*Software Development Intern (Model/Infrastructure)*

Sep – Dec '18

- Led software implementation of JANA's probabilistic model for distributed gas transmission lines
- Redesigned asset storage and hashing in PostgreSQL to improve system throughput by 90.32%
- Deployed Dash integrated Flask application to internal servers using Apache as reverse-proxy
- Authored an internal knowledge base scraper to extract relevant data from user-defined queries
- Built custom git development environment tools and automated update integration into web app

### Integrated Device Technology (IDT)

Waterloo, ON

*Software Engineering Intern (Performance)*

Jan – Apr '18

- Improved proprietary H.265 compression's load distribution across multiple compute cores
- Increased pixel metadata retrieval rate by 75.81% over open-source implementation in x265
- Optimized pipeline designs in H.264's FPGA using Verilog. Reduced total negative slack by 30%
- Wrote client-side scripts to improve SSH compatibility in the company's internal git workflow

## PROJECTS

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### YelpCamp

[git.io/fhG5W](https://github.com/fhG5W)

- Building a Heroku-hosted Node.js application to serve an interactive collection of campsites
- Utilized Passport.js to implement authentication and MongoDB to achieve lightweight storage

### UltraInstinct

[git.io/f4dhQ](https://github.com/f4dhQ)

- Designed a Twitter-API based Flask application that analyzes users based on their twitter activity
- Utilized IBM Watson's natural language processing API, to perform tweet sentiment analysis

### Smart-Cane

[git.io/f4d9G](https://github.com/f4d9G)

- Led an embedded systems project, for designing a smart walking-aid for the vision-impaired
- Implemented an automated, proximity-based warning system through ultrasonic signal probing
- Generated cross-compiled MIPS instructions for Onion's Omega2 chip, using GNU Toolchain

### MinBlog

[git.io/fhsJI](https://github.com/fhsJI)

- Constructed a blogging site using RESTful routing on Node.js backend and MongoDB storage
- Designed intuitive user interfaces with Semantic UI and responsive components using JQuery

## EDUCATION

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### University of Waterloo

Sept '17 – Apr '22 (*expected*)

*Candidate for Honours Bachelor of Applied Science in Computer Engineering*

- President's Scholarship of Distinction (2017)

### Relevant Coursework

- Algorithms and Data Structures, Full Stack Web Development in Node.js, Digital Computers, React Native Application Development, Fundamentals of Programming, Discrete Math and Logic

## ACTIVITIES

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- UWMCC Web Developer, UW Rubik's Cube Club, McHacks(2018), StarterHacks (2018)