

# Jonathan Young

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[github](#) | [linkedin](#)

## EXPERIENCE

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### BlueCrew

Software Engineer II

Sep 2021 - Current

Remote: May 2024 - Current

- **Terminal App:** Led the design and implementation of a Next.js web application enabling users to perform clock operations by selecting their profile from the job roster. Utilized client-side rendering, with scheduled and dynamic backend API calls to synchronize and perform shift operations. **This application manages 75% of all company shifts**, significantly streamlining the process and improving efficiency.

Software Engineer

Sept 2021 - April 2024

- **Attestations:** Reduced post-shift support tickets related to meal break corrections by **60%** by creating an end-to-end service in Spring Boot using REST APIs for shift validation based on state requirements for meal breaks. **This solution impacted 22% of shifts**, prompting users to correct or flag non-compliant breaks, thereby ensuring compliance and reducing manual intervention.
- **Policy:** Achieved an **18% improvement in fill rates month-over-month** by developing a strike-policy system in Spring Boot. This system alerts users to attendance policy violations, allowing account managers to remove non-compliant personnel. **As a result, the company experienced a growth of 5,000+ shifts per month** due to better user attendance management, enhancing overall productivity and operational efficiency.
- **Ionic-Migration:** Improved user experience by **87%**, as measured by user sample surveys, by **creating a state-based shift details routing service in Ionic-Angular**. This migration simplified routing and error handling, **providing users with relevant resources and reducing steps needed to process their shifts or take clock actions**, thereby significantly enhancing the user experience.
- **Auto-Approval:** Reduced monthly expenses linked to third-party timestamp evaluation by **20%**, as measured by support cost analysis, by **creating an automated timekeeping approval system using TypeScript**. This system harnessed timestamps to authenticate crewmember records, **reducing the average time to approve timestamps from 15 to 12 hours** and eliminating manual errors and rework, resulting in more efficient and accurate timekeeping.
- **3P - Third Party Timesheet Import:** Recovered **\$150k in previously unaccounted shifts and achieved on-going weekly improvements of \$15k**, as measured by billing accuracy analysis, by **integrating third-party timesheets into internal billing systems**. This involved creating data mapping resources, Typescript wrappers, and defining Swagger API specifications, **saving approximately 30 hours per week in payroll processing**, representing a 58% efficiency increase. Additionally, **7 out of 8 crew employees reported a significant workload reduction and enhanced ease in managing pay and adjustments**.

### Micro Autonomous Vehicles

Software Engineer

June 2020 - Aug 2021

Seattle, WA

- **Created a tool in Python to integrate legacy C++ software** for use with CARLA, an open-source, Unreal Engine vehicle simulator. **The tool allowed the team to train and test the fidelity of autonomous control systems**, thereby facilitating the development and testing of advanced autonomous vehicle functionalities.
- **Developed a TensorFlow training model and validation framework for object and obstacle detection** to segment pathing lanes using the YoloV5 framework. **This framework enabled accurate and efficient detection of objects and obstacles**, enhancing the overall performance and reliability of the autonomous control systems.
- **Developed a model validation framework to evaluate object avoidance and PID controller performance**. This framework rigorously tested and validated the efficiency and accuracy of autonomous vehicle control systems, ensuring reliable object avoidance and optimal controller performance in various scenarios.

## SKILLS

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**Programming Languages** TypeScript | Java | C++ | JavaScript | Python

**Technologies** AWS RDS/DDB/EC2/ELB | Ionic | Next.js | Spring-Boot | YoloV5 | OpenCV | Android | ROS

## EDUCATION

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Bachelor of Science - Computer Science and Software Engineering

University of Washington - Dean's List

Sep 2019 - Dec 2020

Bothell, WA

## NOTABLE PROJECTS

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### 3D Mapping with Simultaneous Localization and Mapping (SLAM)

Sept 2020 - Dec 2020

*Student Software Project*

*Seattle, WA*

- Created a localized Point Cloud map of surroundings using 3D Lidar data in Point Cloud Library with C++. This map provided high-resolution spatial representations of the environment, facilitating accurate perception and navigation for autonomous systems.
- Separated key points using Normal Aligned Radial Features (NARF) to identify landmark orientation features. This technique enhanced the accuracy of landmark detection and orientation, improving the robustness of the autonomous vehicle's localization and mapping capabilities.
- Developed a Point Cloud feature comparison tool using a K-d tree to create motion vectors for estimating car movement and speed over several vectors and frames. This tool provided precise motion estimation, enabling better tracking of the vehicle's trajectory and improving the overall performance of the navigation system.

### Washington (WA) COVID Vaccine Finder - COVIDWA.COM

Jan 2020 - Apr 2020

*Volunteer Software Engineer*

*Remote*

- Created a relational database using MySQL to build the rule-set and data model for COVID-19 alert system.
- Published data using PHP to and allow for limited editing and alteration of member data while maintaining database integrity and security by query tuning.
- Wrote JavaScript web scrapers to collect vaccine availability to provide real-time inventory updates.

### Image Edge Detector

Sept 2020 - Oct 2020

*Student Software Project*

*Seattle, WA*

- Developed an edge feature extractor in C++ using a convolution mean filter to segment into greyscale images.
- Created image convolution filter by comparing 2D kernel to determine average RGB pixel weights.
- Designed gradient comparison filter using non-maxima suppression to measure gradient magnitude and identify object edges