Bryan Birch

Junior Software Developer | Registered Nurse

Tacoma, WA | 970-291-1377 | emtbirch@gmail.com

[LinkedIn](https://www.linkedin.com/in/bryan-birch-a998b11ab/) | [GitHub](https://github.com/birchbdev) | [Profile](https://birchbdev.github.io/github.io/)

# Professional Summary

Detail-oriented software developer with over a decade of experience in healthcare as a registered nurse. Proficient in Python, C++, SQL, and modern frameworks such as React and Node.js. Skilled at developing full-stack applications, optimizing backend systems, and working with EHR systems to improve documentation accuracy and compliance. Demonstrated ability to manage complex datasets, enhance system performance, and collaborate with cross-functional teams to deliver user-centric solutions.

# Technical Skills

Languages: Python, C++, C#, JavaScript, HTML, CSS, Java  
Frameworks/Libraries: React, Node.js, Express, ASP.NET, Django, Bootstrap, jQuery  
Databases: MySQL, SQLite, MongoDB, BigQuery  
Tools & Platforms: Git, AWS, REST APIs, Postman, Docker, VS Code  
Concepts: Agile Development, CI/CD, Unit Testing, Debugging, Data Pipelines, HIPAA Compliance, EHR Integration (Epic, Cerner)

# Education

Bachelor of Science in Computer Science  
Southern New Hampshire University (Online)

Associate of Science in Nursing  
Colorado Northwestern School of Nursing, Steamboat Springs, CO

# Projects

**Hospital Procedure Scheduler (Python, C++, PyQt, OpenCV, AI Integration)**

* Designed a desktop application to streamline hospital procedure scheduling with real-time room status tracking and predictive scheduling logic.
* Integrated computer vision models (YOLO, DeepLab) for real-time monitoring of surgical suite readiness.
* Built with PyQt for a responsive UI; incorporated drag-and-drop scheduling and automated alerts.
* Used AI to analyze historical patterns, reducing room downtime and provider idle time.

**Weather Station with ESP32 (C++, I2C, OLED, U8G2 Library)**

* Developed an embedded weather monitoring system using an ESP32 microcontroller and LM75 temperature sensor.
* Implemented I2C communication with OLED display using the U8G2 graphics library.
* Debugged sensor communication protocols and optimized real-time temperature display output.
* Explored local data collection and future cloud integration for environmental data tracking.

**Fitness Game MVP (Cross-Platform Android/C++)**

* Created a gamified fitness app that separates game logic from physical activity inputs.
* Built core gameplay loop in C++ with power-up mechanics tied to real-world exercise completion.
* Designed with mobile cross-platform deployment in mind (via Android NDK + Java/Kotlin interop planned).
* Demonstrated design patterns and modular architecture for future scaling.

# Professional Experience

## Clinical Documentation Specialist Conifer Health Solutions, Tacoma, WA | July 2023 – Present

- Improved documentation compliance by 25% by collaborating with IT to restructure EHR workflows  
- Implemented automated checks and templates in Epic, reducing average note completion time by 15%  
- Trained 30+ staff on new digital tools, resulting in improved data entry consistency and accuracy

## Travel Nurse – Interventional Radiology St. Joseph Medical Center, Tacoma, WA | Feb 2022 – July 2023

- Streamlined procedure documentation by coordinating with radiology IT teams and using digital charting tools  
- Maintained 100% compliance with real-time data entry standards in high-volume clinical settings

# Activities & Volunteer Work

- Volunteer Scientific Diver, Reef Aware Foundation: Performed underwater data collection and reef health monitoring  
- FAA Part 107 Certified Drone Pilot  
- Technical SCUBA Diver – Experienced in high-pressure environments, above and below sea level