Brent Arthur Monning

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Objective

- Undergraduate computer science student experienced in leading small teams and actively contributing to projects written in Python, Java, and other fields of expertise. Seeking opportunities to solve real world problems with solutions that can be depended on.

Education

- **B.S. Computer Science**   **09/2024 - expected 2028**
  Southern Oregon University

- **High School Diploma**   **09/2020 - 06/2024**
  Ashland High School, Oregon

Projects & Experience

- **Email Encryption Research**   **10/2025 - present**
  Designed a client-side email security system to implement end-to-end encryption without mail server intervention and to limit high-volume spam by stake-weighted identity. Implemented a working prototype from scratch under a 24 hour constraint for the 2025 BSV Medford Hackathon, and earned 2nd place. Currently researching scalability as a chain-agnostic method for securing email from any provider.

- **LiDAR Topography Research**   **06/2024 - present**
  Processed over 156 square miles total of area in the state of Oregon, primarily Crater Lake, with a resolution of around 15,500 by 11,500 pixels per raster image. Converted raster images from ESRI GRID to GeoTIFF format for usage with Rasterio and NumPy. Trained a random forest model to classify terrain, and correlated detected canopy heights with elevation.

- **Robotics Programming Lead**, FRC Team 3024   **10/2022 - 06/2024**
  Promoted to lead programmer in 2023, overseeing a subteam of 5 students. Completed migration of legacy LabVIEW codebase to Java. Responsible for 85% of drivetrain code and autonomous routines, including the implementation of all 5 CAN motor subsystems. Mentored subteam to implement all vision pipelines, including object and AprilTag recognition.

- **OSS Contributions on GitHub**   **09/2021 - present**
  Over 550 commits done as of July 2025, with 30 public repositories. Implemented screenshot functionality in the toolbar on IINA media player. Added support for the "xcodes" helper to the Topgrade CLI tool. Revitalized stack of visual robot software creator for the WPILib framework.

Skills

- **Proficient Languages**: Python, Java, Rust, Swift, Dart, C/C++, JavaScript, Common Lisp.
  Familiar Languages: Clojure, Nim, Zig, Racket, Go.

- **Proficient Technologies**: Nix, Linux, Windows, macOS, Ansible, Flutter, NumPy, SwiftUI, Keras, CoreML, AWS, Ollama, Pandas, LaTeX.
  Familiar Technologies: React, Astro, Vite.