# Edward A. Silva

easilva@mines.edu | Linkedin.com/in/edwardsilva04 | (702) 720-7735

## Education

**BS, Electrical Engineering** – Colorado School of Mines May 2026
**Computer Science Minor, Software and Algorithm Design**
**Honors:** Deans list, Honor roll, Provost Scholarship, C-MAPP Scholar | GPA: 3.38
**Courses:** Control Systems, Electric Machines, Electromagnetics, Embedded Systems, Software Engineering

## Experience

**Undergraduate Researcher,** ePower Hubs Research Lab – Golden, CO June 2024 – Present
- Devising a neural network model to predict sensor system failure in wind turbine systems
- Researched, conducted literature review, and analyzed offshore and onshore wind energy systems, focusing on variable voltage, power, and frequency integration with the existing power grid.
- Future prospects aiming to reduce maintenance, design, and integration costs of complex wind farm grids

**Office Assistant,** Fairfax County Public Schools – Fairfax, VA June – August 2024
- Streamlined office operations, using Microsoft Excel, by efficiently responding to 600+ information requests, maintaining and updating records of 300+ students, and preparing documents, improving overall productivity.
- Coordinated program setup and close-out, managing supply distribution, collection, and event inventory with 15 classrooms, 300+ participants, and 50+ staff.

**Coding Instructor,** Code Ninjas – Fairfax, VA March – August 2022, May – August 2023
- Tutored 50+ students in JavaScript and C#, enhancing their coding skills and led STEM camps for 100+ students, covering 3D Modeling & Printing, Robotics, and C# development
- Deployed and managed a remote 3D printing server via OctoPi, streamlining operations for 3 printers
- Awarded Instructor of the Month (June 2022 & July 2023) for exceptional teaching methods

## Projects

**Solar Panel Optimization Robot,** Python, Arduino, Github Present
- Prototyped and coded controller for optimal solar panel alignment utilizing Arduino microcontroller, light sensors, and motor controllers to adjust for azimuth and zenith angles.
- Developed a prototype with a servo motor for pitch adjustment and a stepper motor for yaw adjustment, enhancing solar panel alignment and energy capture
- Integrated an advanced tracking algorithm into the Arduino microcontroller, enabling real-time adjustments to the solar panel's position based on the sensor's data
- Conducted system testing and calibration under various atmospheric conditions ensuring optimal performance

**Clue Game,** Java, Github August – December 2023
- Applied SCRUM and Test Driven Development with a team of 3, to collaboratively develop a Java-based Clue game, ensuring precise coding standards and accurate gameplay
- Developed an interactive and user-friendly interface using Java Swing, which included a dynamic game board, player status panels, and an itemization of every character

**Hydraulic Ram Pump,** Engineering Design Cornerstone August – December 2022
- Recognized as Subject Matter Expert (Top 4 of 40 teams) for presenting an innovative design solution and having the most accurate information, enhancing team credibility and project visibility
- Collaborated with a team of six to design a cost-effective solution for managing acid mine drainage and reducing environmental impact at legacy mining sites
- Engineered a working prototype under $100 using PVC piping and a PH filtration system
- Contributed to a 90-page detailed documentation, synthesizing academic and professional research to support the project's design and implementation

## Skills

**Programming Languages:** Java, Python, Verilog, C, C++, C#, RISC-V Assembly, Bash, MATLAB, VBA
**Technology:** SolidWorks, Virtualization software, VS Code, SSH, Linux OS (Ubuntu), Raspberry Pi, Arduino