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EDUCATION

Politechnika Wrocławska   Oct 2021 – Present

Bachelor of Science in Electronics and Computer Engineering (GPA: 3.9)

- **Relevant Coursework:** Artificial Intelligence (Python, JS), Software Engineering (JS, Java, C++), Embedded

  Systems, Circuit and Signal Theory, Physics, Mobile & Web Development (JS, Java, C++).

Cisco Networking Academy   Oct 2021 – Present

CCNA: Introduction to Networks trainig for associate-level jobs

- **Relevant Coursework:** TCP/IP and Network Protocols, IP Addressing and Subnetting,Routing and Switching,

  Network Security Essentials, Cisco Device Configuration

EXPERIENCE

NeurexAI   May 2022 – Jan 2023

Software Engineer / Founder

- Developed and launched a subscription-based website offering an AI-powered trading indicator using React.js & Node.js.
- Designed and implemented AI models (KNN, Perceptron). With custom distance functions to power the trading indicator.
- Optimizing MongoDB database and Stripe customers reduced query response time by 60%.
- Integrated Stripe for secure payment processing and managed user subscriptions.
- Managed business operations, customer support, product iterations, and marketing.

PROJECTS

Artificial Intelligence Trading Tool

Technologies: React.js, Pine Script, JS, Machine Learning

- Developed an AI-based trading indicator designed to predict market trends and assist traders in making data-driven decisions.
- Implemented Machine Learning algorithms, including KNN, Perceptron, and Custom Gaussian filtering to analyze historical market data and generate real-time predictions.
- Improved prediction accuracy of the KNN algorithm by 70% using custom-fitted distance functions.

N.E.A.T. AI Web Game

Technologies: JS, p5.js, N.E.A.T.

- Developed a web game where players control a spaceship to avoid astroids, with the game fully running on AI-powered agents.
- Used N.E.A.T. to train AI agents that autonomously control the spaceship.
- Designed the game's graphics and animations using p5.js.
- Focused on improving agent performance with custom fitness functions that evolve over time.

Autonomous Mars Rover

Technologies: Python, ROS, OpenCV, Arduino, 3D

- Built a multi-terrain rover capable of autonomous navigation using real-time AI simulation.
- Designed a soil collection system using a robot arm to gather samples for chemical analysis.
- Implemented a protein detection system using copper-based reagents to identify potential signs of life.
- Integrated computer vision and sensor fusion for terrain analysis and obstacle avoidance.

High-Altitude Data Collection Vehicle

Technologies: C++, Arduino, Sensors, Radio Comms, 3D

- Developed a single-EDC flying vehicle designed to ascend to high altitudes and gather environmental data.
- Implemented a dual-motor system spinning in opposite directions to counteract gyroscopic yaw for stable flight.
- Integrated multiple sensors and shielding for interference from high-current BLDC motors.
- Real-time data transmission using high-power RF transmitters.
- Increased data transmission stability by 40% and decreased noise by 75% by integrating a custom object-tracking yagi antenna.

Brainwave-Controlled Muscle Stimulation

Technologies: EEG, PCB, Signal Processing, TENS, Embedded Systems

- Designed and built a custom EEG device to read brainwaves using a custom board with multiple amplifiers and signal filtering.
- Built a system that translates brain activity into signals to control another person's muscles via a TENS unit.
- Engineered real-time signal processing to extract brainwave patterns for activation of preselected muscles.

Mootify - Emotion Sharing Watch

Technologies: Ionic Capacitor, Supabase, BLE, Embedded Systems, Computer Graphics

- Created an Android/iOS app allowing users to send emotions to friends via a custom smartwatch.
- Implemented real-time notifications, storing interactions in a Supabase database.
- Developed BLE communication for the longevity of the Mootify watch battery and available screen time.

Self-Balancing Robot

Technologies: C, PWM, PID Control, Bluetooth, Ionic React Capacitor

- Engineered a fully autonomous balancing robot using a gyroscope-driven PID controller to maintain stability on two wheels.
- Implemented a real-time motor control system with PWM adjustments and direct register manipulation for optimized performance.
- Built a custom Bluetooth communication protocol, enabling control via a mobile app developed with Ionic React Capacitor.
- Enhanced system responsiveness by fine-tuning PID parameters and optimizing sensor data processing for real-time adjustments.

SKILLS

- **Languages:** English, Turkish, Japanese
- **Programming Languages:** Python, JavaScript, Java, C++, C#, Rust
- **Frameworks and Tools:** React.js, Node.js, TensorFlow, Docker, Google Cloud, GitHub Actions
- **Interests:** Machine Learning, Unity 3D, Unreal Engine, Game Development, 3D design, Blender 3D, MGFA, Piano