

# Noah B. Vilk

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**Objective:** To obtain an internship in EE or an engineering related career field in aerospace.

## EDUCATION

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### University of Central Florida

Orlando, FL

*Bachelor of Science in Electrical Engineering* - Expected 2027

**Fall 2023 - Present**

- Relevant Coursework: Linear Circuits I & II, Semiconductor Devices, Digital Systems, Electromagnetic Fields, Computer Organization.

## WORK EXPERIENCE

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### Regional Technician - *ShadowLand Laser Adventures*

**March 2022 - June 2024**

Maryland, USA

- Managed technical operations for a high-volume entertainment center, ensuring optimal system performance and minimal downtime.
- Diagnosed, repaired, and maintained optical laser systems, including player hardware, networking, and audio subsystems.
- Serviced and troubleshoot multiple arcade game machines, addressing hardware, software, and control interface issues.

## PROJECTS

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### Raspberry Pi Microcontroller Development Board - Embedded

**September 2025**

- Designed a compact printed circuit board with the RP2040 chip as an embedded business card.
- Optimized board size while retaining core input/output ports for protocols such as Inter-Integrated Circuit, Serial Peripheral Interface, and Universal Asynchronous Receiver-Transmitter.
- Integrated USB-C for power and communication, 128 MB flash storage, and a debug LED.

### RISC-V Softcore Processor - Verilog

**July 2025**

- Created and tested a fifth-generation reduced instruction set computer on the BASYS 3 Field-Programmable Gate Array (FPGA) using the AMD Artix-7 integrated circuit.
- Developed the register file, arithmetic logic unit, control unit, and instruction memory in Verilog.

### Embedded Blackjack System - C

**December 2024**

- Designed and programmed an embedded Blackjack game on a custom Atmel ATmega328 printed circuit board (PCB) using C and PlatformIO.
- Implemented hardware-driven game logic with multiplexed control for the 7-segment display.
- Managed button input handling and LED indicators for user interaction.

### Monopoly Simulation Utilizing Artificial Intelligence - C

**November 2024**

- Incorporated a multi-agent AI simulation of Monopoly in C, featuring command prompt visuals.
- Programmed fully autonomous player logic for property acquisition, cash management, and movement decisions.

## TECHNICAL SKILLS

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**Programming Languages:** C, C#, Python, JavaScript, Java, MIPS Assembly, MATLAB

**Digital & FPGA Design:** FPGA, Verilog, Vivado, AMD Xilinx, Multisim

**Embedded Systems & Microcontrollers:** Atmel AVR, RP2040, Espressif SOCs, PCB Layout, EasyEDA

**Analog Circuit Design:** Oscilloscope, Filters, Op-Amps, LTSpice, BJTs & MOSFETs, Hand Analysis

**Additional Tools & Software:** Autodesk Fusion, Visual Studio & VSCode, PrusaSlicer, Git/GitHub

**Interpersonal:** Communication, Collaboration, Adaptability, Project Management, Critical Thinking