

Visnu Shivaraj Pandian

B.S. Computer Science

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EDUCATION

Bachelor of Science in Computer Science with Area of Emphasis in Cybersecurity

West Virginia University, Morgantown, WV

Aug 2022 - Dec 2025

GPA: 3.52

Recipient of NSF S-STEM program ACCESS Cybersecurity Scholarship.

Featured in the President's list for one semester and Dean's list for two semesters

Relevant Coursework

File and Data Structures | Digital Logic Design | Software Engineering | Multivariable Calculus | Microprocessor Systems | Probability & Statistics | Computer System Concepts | Wireless Networking | Principle-Programming Languages | Analysis of Algorithms | Incident Response | Computer Communications | Secure Software Development | Cybersecurity Principles & Practices | Technical Writing | Automata Theory | Operating Systems Structure | Big Data Engineering | Ethical Hacking & Pentesting | Responsible & Safe AI

SKILLS AND CERTIFICATES

Back End: Python | C | MySQL | Java | Assembly

Front End: HTML | JavaScript | Inkscape | Aseprite | JPEXS | CSS

AI Tools: Github Copilot, Claude (Opus, Haiku), Gemini, Cursor

Misc Tools: Qiskit | VSCode | Github | JMP | Matplotlib | Burp Suite | SET | Nmap | Hashcat | WireShark

Soft Skills: Leadership | Teamwork | Critical Thinking | Public Speaking | Problem Solving

Certificates: Q-CTRL Quantum Fundamentals  | IBM Quantum Computing Masterclass  | Data Science Methodology  | Data Analysis with Python  | Python for Data Science  | Java (Sololearn) 

WORK EXPERIENCE

Research Intern - Quantum Computing

Deloitte India, Bangalore, India

May 2024 – Aug 2024

- Developed Quantum Key Distribution algorithm based on BB84 using IBM's Qiskit Library in Python.
- Integrated QKD algorithm with custom TCP model to simulate symmetric optic fiber connection secured using properties of qubits.
- Developed a prototype TCP model to detect intrusions over a combination of optic fiber networks and symmetric key encryption standards based on AES.
- Coded communication protocol between virtual machines to share qubits over secure TCP connections.

Research Intern - Data Science

Indian Institute of Information Sciences Delhi, Delhi, India

May 2023 – Aug 2023

- Collaborated with a team of computational biologists and data scientists to develop a scalable Python algorithm, DoubHash, to perform DNA nucleotide pattern mining and extract motifs of varying length from datasets of cancer patient samples..
- Implemented partial index-based string splicing to generate custom hash values based on K-mer length. Leveraged these values to intentionally cause collisions and use the collision problem of hash tables to speed up K-mer mapping and bucketing.
- Used multi-processing to engage multiple cores based on K-mer lengths of motifs to search for, and pooled results using custom hash values to re-bucket across cores.
- Compiled data analytics on efficacy of algorithm versus industry standard methods (MEME suite, STREME, Prosampler, etc.) using ChIP-seq data from 30 transcription factors obtained from the ENCODE project as the basis.

PROJECTS

INDRA: Interceptor for Neutralization and Drone Remote Access Platform

West Virginia University

Jan 2025 – Dec 2025

- Refactored Python codebase to improve readability, modularity, organization and long-term maintainability.
- Improved scanning and de-authentication modules, created prototype for command injection module.
- Rebuilt new GUI using Tkinter with focus on retroactive host search, live message logging, live video feed, and overall user experience.
- Created documentation for the project via Programmer's manual and README files.
- Eliminated multiple edge-cases and overlaps previously responsible for crashes.
- Compiled deployable Virtual Machine to facilitate distribution of the project as a tool.

0x Nihilo: Custom MPX Operating System

West Virginia University

Aug 2025 – Dec 2025

- Collaborated with a team of 3 developers to create a custom operating system, 0x Nihilo, usable via WSL.
- Created date/time retrieval/editing and custom alarm-related functions.
- Created functions that allow users to resume, suspend, block & unblock PCBs.
- Implemented custom process dispatching and memory management with applied dispatching.
- Implemented interrupt-based user input, command history and I/O scheduling.

LaTeXGPT: AI powered Resume Building Website

West Virginia University

Aug 2025 – Dec 2025

- Created LaTeXGPT website using Next.js, Tailwind CSS and TypeScript to accept and analyze student resumes, provide actionable feedback based on user's needs and return LaTeX-formatted resumes.
- Integrated Gemini API to power a chatbot which analyzes resume content and works with students to suggest and integrate improvements.
- Enabled local and online LaTeX file compilation and editing via Overleaf and CriXet.

AI Hallucination: Big Data Analytics

West Virginia University

Aug 2025 – Dec 2025

- Collaborated with a team of 3 data scientists to analyze the severity of hallucinations from LLMs and identify prevailing biases and patterns using Python, AI, and LLMs.
- Used publicly available hallucination data from the HaluEval project to gather data in JSON format.
- Developed custom Python algorithm to understand sentences and determine their complexity by considering domains of topics, time period of questions, grammar, sentence structure, etc.
- Trained a custom TF-IDF vectorizer using pre-determined seed prompts to identify the complexity of a given question, assuming it is grammatically correct.
- Integrated TF-IDF vectorizer into algorithm to rate selected hallucinations from the HaluEval dataset.
- Derived relationship between complexity of prompt and variance of hallucination severity based on ratings.

MazeQuest: Browser RPG-like Dungeon Crawler

West Virginia University

Aug 2023 – Dec 2023

- Collaborated with a team of 6 sophomore developers to simulate Agile development and integrate customer feedback over 12 sprint cycles.
- Developed RPG-like browser game with integrated level builder and account login using JavaScript, HTML, CSS, Pixi.js and Supabase.
- Created various digital art assets used for backgrounds, email verification, environment, level builder, player/NPC sprites and animation using Aseprite and Inkscape.
- Created NPC movement and action script with customizable action list and priority for unique behaviors.

COMPETITIONS

SecureWV: Capture The Flag

Charleston, WV

24 – 25 October 2025

- Competed in and won first place in the Capture The Flag competition.
- Learned more about Lateral Movement and Drone Reconnaissance.

Bitcamp 2025: LSB Steganography & Substitution Cipher

University of Maryland

11 – 13 April 2025

- Collaborated with a team of 3 to create a custom substitution cipher algorithm and use it to encrypt/decrypt prehistoric caveman-style messages to/from images using steganography.
- Created frontend logic using HTML and CSS to process image upload/download and website navigation.
- Used Python's stegano library for Least Significant Bit encryption and decryption for image steganography.
- Developed art assets such as website logos using Inkscape.

Hen Hacks 2025: AI powered Google Calendar Optimizer

University of Delaware

1 – 2 March 2025

- Collaborated with a team of 3 to develop an AI-powered calendar scheduling, editing and optimization website using HTML, CSS, JavaScript, Flask(Python), and Gemini API.
- Created frontend for .ics file upload, download and backend processing logic.
- Developed custom .ics file parsing algorithm in Python to parse uploaded files, extract relevant dates and events and identify blocked timeslots accordingly.
- Created frontend mechanism for users to create tasks with desired total time, frequency, descriptions and specify working and blocked hours which are avoided during task allocation.

Hoya Hacks 2025: File Management System with Corruption/Risk Reporting

University of Georgetown

24 – 26 January 2025

- Collaborated with a team of 3 to create a file metadata extraction and analysis application in Python.
- Created file processing pipeline to detect MIME file types using Python's magic library, extract timestamps and EXIF data and compile a JSON report on each file scanned.
- Created custom security mechanism to identify if files are corrupted based on MIME/EXIF data.

National Cyber League

West Virginia University

Aug 2024 – Nov 2024

- Represented WVU in the NCL Fall individual and team games.
- Learned how to perform tasks related to OSINT, cryptography, password cracking and scanning.

Locked Shields: Cybersecurity Exercise

West Virginia University

April 2024 – May 2024

- Represented WVU in the Locked Shields 2024 exercises organized by CCDCOE.
- Learned how to perform active reconnaissance and surveillance on Windows systems.

LECTURES & WORKSHOPS

QSKT 101: Intro to Quantum Computing

14 Sep 2025

- Delivered lecture and associated in-class activity on quantum computing and Qiskit (IBM) to undergraduate students.
- Differentiated between classical and quantum machines, highlighting the issues which make QC necessary for progress.
- Introduced students to properties of qubits, superposition and entanglement.
- Presented a quantum cointoss demo on how to code with Qiskit and simulate qubits and circuit gates.
- Tested students on their ability to use circuit gates to interact with qubits by rigging coin flips.
- Highlighted the issues with development of quantum computers and real-world constraints of using qubits.

CYBR 101: Self-Reconnaissance on Windows

17 Nov 2025

- Delivered an introductory lecture and in-class demo on Reconnaissance and Lateral Movement on Windows systems using PowerShell to a class of undergraduate Computer Science and Cybersecurity students.
- Explained the 5 phases of penetration testing: Reconnaissance, Scanning, Vulnerability Assessment, Exploitation and Reporting.
- Conducted follow-along activity using Windows PowerShell to perform reconnaissance on self.
- Instructed students on how to identify system identity, perform enumeration and investigating processes.
- Instructed students on how to identify persistent malware and spot suspicious processes in their system.

- Advised students on how to document their reconnaissance findings and craft a report for further action.

CYBR 100: Cryptography and Ciphers

7 Sep 2024

- Delivered an introductory lecture and in-class demo on the history of Cryptography
- Explained the security value of data encryption/decryption
- Instructed students on how to identify and decrypt substitution ciphers based on formatting of ciphertext.
- Conducted follow-up activity where students decrypted ciphertext using known pool of substitution ciphers.

STANDARDISED TEST SCORES & LANGUAGES

GRE: Total 323/340 | Quant 165/170 | Verbal 158/170

SAT: Total 1450/1600 | Math 770/800 | English 680/800

Languages: English | Hindi | Tamil | Sanskrit

EXTRACURRICULARS

Public Outreach Manager

CyberWVU

Aug 2023 – Dec 2025

- Led reorganization and rebranding of the club as interim president to identify and recruit new officers.
- Conducted student outreach and participated in student organization fairs to increase active membership from 10 to 40 members.
- Collaborated with guest speakers to organize 6 informative meetings for club members.
- Led 4 Hackathon trips to other universities with varying group size (4 – 20).
- Delivered 3 lectures and associated workshops to club members.

Student-Athlete

WVU Rifle Team

Aug 2022 – Aug 2023

- Competed in the NCAA as part of the WVU Rifle Team.

Treasurer

Club Rifle Team at WVU

Aug 2023 – Dec 2025

- Competed in postal matches and club circuit as part of the Club Rifle Team at WVU.
- Led reorganization and rebranding of the club to identify and recruit new athletes.
- Volunteered in community service events to raise funding for travel and match fees.

Author

The Archipelagos of Phantasmara

Aug 2025 – Present

- Publishing a web-novel on Royal Road (web fiction forum) with consistent weekly updates.

REFERENCES

Dr. Thomas Devine | Teaching Associate Professor

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