

# Sudhan Pandey

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## EDUCATION

<b>Fisk University</b> <i>Bachelor of Science in Computer Science, GPA 4.0/4.0</i> <ul style="list-style-type: none"><li>• <b>Relevant Coursework:</b> Data Structures and Algorithms, Machine Learning, Data Science, Introduction to Computer Science I(Google In Residence) &amp; II, Computer Organization, Social Implications of Computer Technology, Calculus I &amp; II, Discrete Mathematics, Linear Algebra</li><li>• <b>Honors and Awards:</b> Recipient of Ella Shepherd Moore Provost Scholarship - Fisk University(Full Tuition), Goldman Sachs Market Madness Scholar(2023), Fall &amp; Spring (2022 &amp; 2023) President’s List, Fisk Executive Leadership Scholar(2023), CFA Ambassador (2023-2024)</li></ul>	Aug 2022 - May 2026 <i>Nashville, TN</i>
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## SKILLS

<b>Languages:</b> Python, Java, Javascript, Typescript, C, HTML/CSS
<b>Frameworks and Libraries:</b> NumPy, Panda, Scikit-learn, PyTorch, TensorFlow, React.js, Node.js, Flask, Express, MySQL,
<b>Developer Tools:</b> AWS S3, Git, Cloudflare, React-Redux, Postman, VS-Code, Vercel, Netlify, Firebase

## EXPERIENCE

<b>Machine Learning Research Intern</b> <i>Department Of Energy, SRNL</i> <ul style="list-style-type: none"><li>• Worked as an ML Intern with <b>Savannah River National Laboratory</b> for <b>blind calibration</b> of Wireless Sensor Networks using <b>deep learning</b></li><li>• Coordinated with team to create a <b>CNN based drift projection</b> model</li><li>• Implemented <b>attention mechanism</b> fundamentals for time series dependency of sensor data</li><li>• Working with web development team to create a <b>frontend</b> demo to display the results of the calibration</li><li>• <b>Skills learned:</b> <i>Pytorch, numpy, pandas, blind calibration, reactjs, nodejs</i></li></ul>	March 2024 - May 2024, Aug 2024 - Present
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<b>STEP Intern</b> <i>Google</i> <ul style="list-style-type: none"><li>• Created a analytical dashboard for Google Store frontend engineers to identify and target the <b>most significant</b> asset to work on to <b>improve Google store</b> website performance</li><li>• Eliminated the need to run audits manually <b>100+ audits</b> (saving <b>10+ SWE minutes</b> every audit)</li><li>• Used <b>lighthouse API</b> to run audits on each page of the website and find <b>opportunities</b> to work on</li><li>• Used the <b>dashboard</b> to identify and refactor legacy stylesheet in Google store homepage, <b>saving 705kb+</b> of CSS and <b>improve lighthouse score</b> from <b>53 to 59</b> and implemented a configuration system to scale the change throughout Google Store website</li><li>• Consulted with frontend team to build a new UI Data Mocking tool and laid the foundation for the project (This aims to improve <b>single UI component</b> Mock time: from <b>30 minutes</b> to <b>4-5 seconds</b>)</li><li>• Learned in detail about the <b>google frontend infrastructure</b> and how <b>google production server</b> works</li></ul>	May 2024 - August 2024
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<b>STEP Intern</b> <i>Google</i> <ul style="list-style-type: none"><li>• Worked with <b>Cloud UFO</b> team on turning up <b>virtual cells</b>, an abstraction of many physical cells within a <b>datacenter</b>, for efficient resource planning, scheduling and executing workloads</li><li>• Deployed <b>4 monitoring dashboards</b> in GMon language (built on top of python) to monitor the health of components of the virtual cell, saving time in manually checking and debugging for the team.</li><li>• Used in <b>production by the UFO Organization team</b> to test an ongoing virtual cell turnup in July 2023</li><li>• Learned about the concept of <b>synthetic/black-box monitoring</b> with probers</li><li>• Collaborated and researched with <b>4 different teams</b> to learn about their specific components and their health monitoring</li></ul>	May 2023 - August 2023
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## TECHNICAL PROJECTS

<b>Nano GPT</b> <i>Python, Pytorch, Numpy</i> <ul style="list-style-type: none"><li>• Implemented a scaled-down version of the <b>Generative Pre-trained Transformer (GPT) architecture</b> using PyTorch, focusing on core functionalities such as tokenization, embedding, and transformer blocks.</li><li>• Trained the <b>NanoGPT</b> model on a corpus of Shakespeare’s writings, <b>fine-tuning</b> it to generate text in the style of Shakespeare</li><li>• Developed the self-attention mechanism from scratch, including <b>multi-head attention</b>, and positional encodings, to understand the inner workings of transformers</li><li>• Acquired advanced skills in <b>PyTorch</b> and a deep understanding of <b>GPT model architecture</b>, enhancing capabilities in developing, training, and <b>fine-tuning</b> complex AI models from <b>scratch</b>.</li></ul>	Github	September 2024
<b>Mathemagics</b> <i>Deep learning, Tensorflow, huggingface, numpy, React, Express, NodeJS, Flask, HTML, CSS</i> <ul style="list-style-type: none"><li>• Developed a simple math quiz game based on <b>CNN based hand written digit classification model</b></li><li>• Created the frontend with <b>reactjs and html canvas</b> to let users <b>draw</b> on the screen and provide with scores for a given arithmetic question</li><li>• Implemented a <b>flask api</b> to receive the image detail and classify the image for a given number</li></ul>	Website/Github	January 2024

## EXTRA-CURRICULARS

- Fisk Computer Science Club (August 2022 - Present)
- Fisk Rocket Science Club (August 2022 - Present)
- Equinix-Fisk Hackathon Finalist(August 2022)