

**Joana Konadu Owusu**

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**Location:** Laramie, Wyoming

**Objective/ Summary**

I am a mission driven MSc. Computer Science student supervised by Dr. Shivanand Venkanna Sheshappanavar. My research is in Computer Vision and Deep Learning targeted for Assistive Technologies. I am proficient in Machine Learning and Software Development technologies, and I am seeking to launch my career as a technical expert at Gecko Robotics where I can contribute to meaningful projects and apply my expertise to develop impactful solutions.

**Education**

**Master of Science (MSc) –Computer Science.**

Aug 2024 – May 2026(Exp. Graduation date)

University of Wyoming

GPA: 4.0

**Bachelor of Science (BSc) –Computer Science & Engineering**

Sep 2016 – Aug 2020

University of Mines & Technology

CGPA: 3.61

**Research Projects**

**OVAC: Open-Vocabulary Adaptive Counting in Images & Videos (Lead)**

Oct 2025 – Dec 2025

- Built zero-shot counting model targeting counting failures caused by ID switches, fragmentation, and occlusion
- Designed an identity layer over SAM3 to maintain consistent identities and prevent double counting risks
- Achieved SOTA results across image and video benchmarks tested (over 3% increase in accuracy and lower MAE).

**Smart Glasses for the Visually Impaired (Lead)**

Jan 2025 – Sep 2025

- Engineered an AI-powered smart glasses device, built on a Raspberry Pi, to assist visually impaired in scene analysis and object identification
- Built a cross-platform mobile application to serve as the primary user interface and communication hub to
- Developed a computer vision and LLM model to process sensory data and provide descriptive feedback to the user.

**XPT: Enhanced Point Transformer V3 (Lead)**

Jan 2025 – May 2025

- I re-engineered the Point Transformer model used for 3D point cloud understanding to improve its training and inference accuracy (0.5% to 1.5% across Scannet and S3DIS datasets) and speed (40% decrease in speed) showcasing ability to optimize large ML models for production environments.

**Estimating Optimal Path Route Finding for Emergency Response (Contributor)**

Oct 2024 – Dec 2024

- Applied AI search algorithms (A\*, Dijkstra, Bidirectional Search) to design a decision system for emergency route optimization.
- Developed a risk factor model integrated into heuristic functions and implemented route visualization using NetworkX, demonstrating strong algorithmic and data-driven problem-solving skills.
- Worked on visualizing the determined path on the map using NetworkX framework.

**Work Experience**

**Graduate Research Assistant**

Aug 2024 – Present

University of Wyoming | WY, USA

**Supervisor:** Dr.Shivanand Venkanna Sheshappanavar

- Conduct research at the Geometric Intelligence Research lab specializing in analyzing, improving and developing computer vision and deep learning foundation models under Image, Video and 3D.
- Incorporate techniques such as Image Restoration and Enhancement, Neural Radiance Fields, 3DGS, Diffusion Models, and Vision Language Models for image segmentation, object counting and classification.
- Assist in mentoring undergraduate students during the summer to guide them into starting their research journey.

**Information Technology Coordinator**

Nov 2021 – July 2024

Ghana Education Service |Kumasi, Ghana

- Administered and maintained the school's database systems and networks while maximizing the information technology tools and systems' efficiency and effectiveness

- Performed Network and System administration tasks on Windows Server and SAP software.
- Reviewed schools' system and network performance to make proactive adjustments based on established IT policies.

### **Field Enumerator**

June 2021 – July 2021

Ghana Statistical Service | Accra, Ghana

- Conducted over 180 structured household interviews to collect accurate demographic and housing data for analysis, ensuring compliance with strict confidentiality protocols.
- Utilized GPS devices to record precise geographical data, contributing to the creation of comprehensive population maps.

### **Software Developer Intern**

June 2018 – Aug 2018

Mobile Web Ghana | Accra, Ghana

- Contributed to a fast-paced startup environment, collaborating with senior engineers in an **Agile** team to build customized software products using WordPress, Django, React, Node JS and MySQL frameworks.
- Assisted in the training of beginners in website development using WordPress, Google Sites, HTML, CSS and JavaScript.

### **Awards & Certification**

Total Petroleum Undergraduate Scholarship

Enterprise Design Thinking Practitioner

Azure Fundamentals

**Total Petroleum**

**IBM**

**Microsoft**

Sep 2017 – Aug 2020

April 2021

July 2020

### **Skills**

**Technical Languages:** Python, SQL, CSS, HTML, Java, JavaScript

**Operating Systems:** Windows, Linux, Mac OS.

**Tools and Frameworks:** Git, GitHub, Google Colab, TensorFlow, Numpy, Pytorch, CUDA, Network X, Node JS, React, MySQL, MongoDB, Jupyter Notebook, SQLite, Android Studio, Visual Studio Code, Microsoft Office.

**Soft Skills:** Mission-Driven, Collaborative, Strong Communicator, Eager to Learn, Passion for Growth.

### **Extracurricular & Leadership Activities**

**Volunteer and Software Developer**

**Inclusive Tech Group**

Nov 2020 – to date

- Member of the core team that plans, host and organize events, training sessions, conferences, fairs and hackathons that take place within the organization to advocate for Disability Inclusion in the technology space.
- Part of the product development team that design, develop and implement assistive technologies for Persons with Disability.