

# NICHOLAS C. IKECHUKWU

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[Website](#) | [LinkedIn](#) | [Github](#)

## PROFESSIONAL SUMMARY

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PhD student in computer vision and machine learning at Boston University, focusing on panoptic segmentation (instance + semantic segmentation), continual learning, and vision transformer optimization. Co-author of an ICLR 2026 submission on multimodal orientation reasoning. Experienced in building ML systems, with 3+ years of production software engineering. Seeking to gain experience and contribute to vision and perception systems via the summer internship.

## EDUCATION

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### PhD in Computer Vision & Machine Learning (Expected Graduation date: May 2029)

Boston University, Department of Computer Science | Boston, MA | *Sep. 2024 - Present*

- **Focus:** Panoptic segmentation, continual learning, query-based object detection
- **Graduate Coursework:** Formal Methods in Software Engineering, Principles of Machine Learning, Image and Video Computing (Computer Vision), and Graduate Artificial Intelligence.

### Bachelor of Engineering in Computer Engineering | Summa Cum Laude, First Class Honors

Michael Okpara University | Umudike, Nigeria | *Sep. 2016 - 2021*

- **Major GPA:** 5.0/5.0 (4.0/4.0 equivalent), Final Cumulative GPA: 4.90/5.0 (3.95/4.0 equivalent)
- **Honors:** Top 1% of class, Best Graduating Student, Valedictorian (Class Rank: 1/280)
- **Relevant Coursework:** Artificial Intelligence, Software Engineering, Data Structures & Algorithms, Networking, Digital Systems Design, Linear Algebra, and Statistics for Science and Engineering

## RESEARCH & PUBLICATIONS

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### Co-author, ICLR 2026 Submission (Under Review)

*“RightSideUp: Disentangling Orientation Understanding in Multimodal Large Language Models with Fine-grained Multi-axis Perception Tasks”*

- Co-developed orientation perception benchmark using real & synthetic data from Blender and ShapeNet
- Built a 3D-to-2D rendering pipeline for 1000+ 3D objects with controlled spatial angles and lighting; Contributed to MLLM evaluation, data analysis, visualization, and VQA benchmark construction

### Machine Learning & Computer Vision Research

Boston University Computer Vision Lab | Boston, MA | *Sep. 2024 - Present*

*Advisors: Prof. Bryan A. Plummer, Prof. Deepti Ghadiyaram*

- **Project Focus:** Optimizing vision transformer inference for real-time panoptic segmentation while maintaining performance across sequential learning tasks

- Conducted comparative analysis of continual learning methods (ECLIPSE, CoMBO, BiMeCo) on ADE20K benchmark with custom task splits to evaluate fairness and catastrophic forgetting across sequential tasks
- Worked with state-of-the-art vision transformers and CNNs (Mask2Former, DETR, ResNet) on HPC clusters (BU SCC) with CUDA and GPU optimization
- Developed custom PyTorch pipelines for distributed training, checkpointing, and TensorBoard logging
- Reviewed literature on continual learning, pruning, knowledge distillation, and vision transformers
- Technologies: PyTorch, Detectron2, CUDA, Transformer architectures, Vision Transformers (ViT)

PROFESSIONAL EXPERIENCE

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Teaching Fellow – BU Computer Science Department | Boston, MA

- CS440: Artificial Intelligence (Senior Undergraduate Course in Java):Spring 2025, Fall 2025
- Mentored and assessed 300+ students across two semesters, conducted 180+ hours of office hours, via 1-on-1 guidance on reinforcement learning algorithms, policy evaluation, and problem-solving strategies
  - Designed and led lab sessions covering Machine Learning and Reinforcement learning concepts

Software Engineer

- Tedbree & Tech1M | Lagos, Nigeria |June 2021 - July 2024
- Developed AI-driven APIs for job post generation, real-time chat, and intelligent application workflows
  - Engineered mobile apps with ReactNative and PyTorch Lite for real-time inference (recipe recognition, vehicle tracking)
  - Built backend infrastructure for talent acquisition platform (1000+ monthly users)
  - Technologies: Python, TypeScript, Node.js, MongoDB, React Native, REST APIs, Docker

TECHNICAL SKILLS

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**Languages:** Python, Java, TypeScript, JavaScript, SQL

**Machine Learning & Deep Learning:** PyTorch, Detectron2, TensorBoard, Jupyter Notebooks

**Tools and Platforms:** Git/GitHub, Docker, MongoDB, React, React-Native

ADDITIONAL INFORMATION

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**Spoken Languages:** English (Fluent—language from K-12 through PhD program), Igbo (Intermediate)

AWARDS AND HONORS

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| • Boston University GRS Dean’s Fellowship for Exceptional Newly-admitted PhD students            | 2024 |
| • Best Graduating Student and Valedictorian at the 11th Convocation of Michael Okpara University | 2023 |
| • University Prize for Overall Best Graduating Student - First Degree, Michael Okpara University | 2023 |
| • Dean’s Award for Best Engineering Graduating Student from the Michael Okpara University.       | 2021 |