Ngu Dang

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Education

Boston University   **09/2020 - 05/2026 (expected)**
Doctorate in Computer Science
  – **GPA:** 3.93/4.00 – Passed the PhD Candidate Qualifying Exam.
  – **Relevant Coursework:** Machine Learning, Natural Language Processing, Neural Networks and Deep Learning
    (DeepLearning.AI Professional Certificate), Data Science (IBM Professional Certificate).

Clark University   **01/2018 - 05/2020**
Bachelor of Arts in Computer Science
  – **Minors:** Data Science, Mathematics
  – **GPA:** 3.93/4.00 – First Honors Dean's List in 2018, 2019, and 2020.
  – Graduated with *Summa Cum Laude* and obtained *Outstanding Academic Achievement Award in CS*.

Skills

Programming:	Python, Java, C, C++, MySQL.	**Script:**	HTML, CSS, LaTeX.
Libraries:	Pandas, Numpy, PyTorch, TensorFlow, Keras, Scikit-learn, Seaborn, NLTK, OpenCV.	**OS/Tools:**	Linux, Windows, Git, Jupyter, Google Colab, Visual Studio, AWS EC2, Microsoft Office.

Projects

Real-Time Object Detector   **05/2025 – present**
  – Building a modular object detection pipeline using YOLOv8 + OpenCV, with training in Python and real-time inference
    in C++ which includes automated dataset parsing, annotation conversion, and CLI-based control for training,
    evaluation, and model export using Pascal VOC 2007 and 2012.
  – Applying transfer learning with pretrained YOLOv8n weights and deploying training via automated AWS EC2 GPU setup
    including environment provisioning, dataset upload, tmux execution, and auto-termination to accelerate convergence.
  – Integrating interactive OpenCV visualization for bounding box verification and dataset quality checks and exporting
    trained models to ONNX for portable deployment in low-latency C++ applications. Github link.

Human Activity Recognition Using Deep Learning   **04/2025 – 05/2025**
  – Built a deep learning pipeline using Python and PyTorch to classify human activities from Wi-Fi CSI data, achieving 0.98
    accuracy score with a custom CNN-LSTM model.
  – Designed a complete preprocessing workflow including reshaping, normalization, smoothing, and statistical feature
    augmentation to improve model robustness.
  – Automated model fine-tuning through grid search and visualized performance using confusion matrices and subcarrier
    signal plots to guide iterative improvements. Github link.

Churn Predictor for Subscription Services   **03/2025 – 04/2025**
  – Implemented an end-to-end churn prediction pipeline in Python for a video streaming service using a real-world
    imbalanced subscription dataset using an ensemble of three models — a neural network, XGBoost, and Random Forest
    — using weighted soft voting to optimize class ranking and maximize AUC.
  – Engineered advanced features (e.g., ratio metrics, interaction terms, log transforms, and behavioral buckets) on top of
    20 given features to boost signal quality and improve model discrimination.
  – The model achieved a ROC AUC score of 0.75 (91st percentile). Github link.

Experience

Boston University   **09/2020 – present**
Graduate Research & Teaching Assistant
  – Working on joint projects with professors, postdocs, and PhD students where we study the computational lower bounds
    and upper bounds of complex algorithms and design improvements on top of current state-of-the-art results.
  – Implementing our algorithms, experiments, and demo scripts simulating Boolean circuits in Python.
  – Leading weekly discussion/lab sections, office hours, for Algorithms, Theory of Computation, and fundamental math
    classes such as Discrete Math, Linear Algebra, and Probability.

Clark University   **05/2019 – 05/2020**
Undergraduate Research Assistant
  – Contributed to computer vision and computational geometry research projects for the Computer Science Department.
  – Implemented experiments, statistical analysis, visualization, and geometrical simulations in Python and Java.