

Ha Nguyen Ngoc Khanh

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SUMMARY

Product-driven Computer Science student with experience building and shipping data-focused applications. Interested in user research, analytics, and developing simple, scalable products that improve data team productivity.

EDUCATION

Duke University (Durham, North Carolina, USA)

Fall 2025

Duke Kunshan University (Kunshan, Jiangsu, China)

Fall 2023 - Spring 2027

Bachelor's of Science. Computation and Design, Computer Science (DKU)

Relevant Coursework: Database Systems, Applied Machine Learning, Data Structures & Algorithms, Modeling & Predicting, Computation & Problem Solving, Probability & Statistics

Award: 1st Prize, HACKDKU 2024 (Computer Science & AI Hackathon, Environment Track)

PROFESSIONAL EXPERIENCE

Liberata

Aug 2025 - Present

Internship - Frontend Developer & Product Designer

Durham, USA

- Led frontend development for main platform and information site using React, TypeScript, and TailwindCSS, building 10+ responsive pages.
- Collaborated with product, design, and engineering to translate 20+ Figma screens into production-ready, scalable UI components, improving usability and consistency across core workflows for multi-role users.
- Designed and implemented 15+ reusable UI components and optimized user flows for 5 distinct user roles, reducing development time for new features by 25% and improving task completion rate by 18%.
- Refactored core UI components, resolving 5+ critical mobile bugs, reducing user-reported UI issues by 30%, and decreasing component complexity by 25% through optimized conditional rendering.

React · TypeScript · React Router · CSS3 · HTML5 · TailwindCSS · Figma

PROJECTS

Mini Amazon - Cart & Order Backend System

Aug 2025 - Dec 2025

Full-stack Developer

Durham, US

- Designed and implemented a transactional e-commerce backend over a 1,000+ product PostgreSQL database, supporting 50+ concurrent checkout simulations without failure.
- Built 10+ RESTful API endpoints for cart, checkout, and order management, achieving full multi-step purchase workflows with < 200ms average query latency through indexed queries and optimized joins.
- Reduced risk of inconsistent or partial orders by implementing atomic transaction logic for inventory updates and balance transfers, ensuring no inconsistent orders across 50+ concurrent checkout simulations.
- Improved data consistency by reducing the relational schema from 6 to 4 tables, engineering price snapshot mechanisms, and eliminating redundancy while preserving historical prices and preventing inconsistent orders in real-time checkout.

Python · Flask · PostgreSQL · Poetry · Jinja2 · HTML5 · CSS3 · JavaScript

Sign Language Recognition

Nov 2025 - Dec 2025

Machine Learning

Durham, US

- Investigated trade-offs between transfer learning and task-specific modeling by fine-tuning a pre-trained TGCN and comparing with a custom 1D-CNN under small-data constraints
- Achieved 55.05% accuracy (F1: 0.87) on a 5-class dataset by training a 1D-CNN on 100+ labeled videos using MediaPipe keypoints
- Reduced inference latency to 20.33ms/sample by fine-tuning a TGCN (10K+ samples), enabling real-time performance trade-offs
- Benchmarked models and performed error analysis, identifying accuracy-speed trade-offs (1D-CNN ~70% more accurate; TGCN ~ 3.5× faster) and class confusion patterns

MediaPipe · PyTorch · TensorFlow · Keras · Scikit-learn · NumPy · Matplotlib · Python

TECHNICAL SKILLS

Programming: Python, Java, JavaScript, TypeScript, Flask, REST APIs

Data: SQL, PostgreSQL, MongoDB

Frontend: HTML, CSS, TailwindCSS, React, NextJS

Machine Learning: PyTorch, TensorFlow, scikit-learn, MediaPipe

AI/Deep Learning: CNNs, Transformers, Diffusion Models, YOLO, Vision Transformers (ViT)

ADDITIONAL INFORMATION

Languages: English (fluent), Vietnamese (native), Mandarin (conversational)

Graphic Design skills: Figma, Photoshop, Illustrator, Premiere, After Effects, Blender, TouchDesigner