

Thanh M. Vu

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Education

8/2018 – Exp. 5/2023 **Ph.D. in Computer Science**, University of North Carolina at Chapel Hill Chapel Hill, NC
8/2014 – 5/2018 **B.S. in Computer Science, Minor in Mathematics**, Lafayette College (GPA: 3.97/4.00) Easton, PA

Experience

Graduate Research Assistant — UNC CHAPEL HILL

8/2018 – Present

ADVISED BY: DR. JAN-MICHAEL FRAHM

Chapel Hill, NC

- **Real-Time Vision:** Developing real-time computer vision and deep learning algorithms for resource-constrained applications in autonomous driving. Currently focusing on temporal, multi-frame problems such as 3D scene flow estimation
- **Adjustable CNNs:** Designed real-time adjustable-size CNNs that allow fine-grained control over the speed-accuracy trade-off depending on the available budgets during inference, achieving 78% better performance than prior methods
- **Collaborations:** History-accuracy trade-off and schedulability of object tracking; throughput, latency, and accuracy of object detection in embedded platforms; versatile convolution operations for spherical images

Augmented Reality Engineer Intern — LENOVO

6/2020 – 7/2020

ORG: CLOUD & SOFTWARE ENGINEERING LAB

Remote

- Researched and developed image tracking-based enterprise AR applications using Unity on the ThinkReality A6 headset

Research Assistant — LAFAYETTE COLLEGE

5/2015 – 5/2018

ADVISERS: DR. AMIR SADOVNIK & DR. CHUN WAI LIEW

Easton, PA

- **Visual Similarity:** Proposed and hierarchically learned aesthetic compatibility of fashion items using Triplet networks
- **Object Detection:** Designed a poster retrieval system that extended a deep learning-based object detection framework
- **Mobile Recognition:** Developed on-device building recognition for mobile platforms using OpenCV's feature extraction

Software Development Engineer Intern — AMAZON

5/2017 – 8/2017

ORG: DIGITAL BOOK STORE

Seattle, WA

- Implemented a Kindle app's feature that allows 100M+ users access to more search results with 50% fewer clicks

Publications

- **T Vu**, M Eder, T Price, JM Frahm. Any-Width Networks. CVPRW'20.
- T Amert, M Yang, S Nandi, **T Vu**, JH Anderson, FD Smith. The Price of Schedulability in Multi-Object Tracking: The History-vs.-Accuracy Trade-Off. ISORC'20.
- M Yang, S Wang, J Bakita, **T Vu**, FD Smith, JH Anderson, JM Frahm. Re-thinking CNN Frameworks for Time-Sensitive Autonomous-Driving Applications: Addressing an Industrial Challenge. RTAS'19.
- **T Vu**. Learning Visual Compatibility: An Improved Method for Visual Compatibility Embedding. Undergraduate Thesis '18.
- A Sadovnik, W Gharbi, **T Vu**, A Gallagher. Finding your lookalike: Measuring face similarity rather than face identity. CVPRW'18.
- **T Vu**, D Piro, A Sadovnik. How your phone recognizes your home: An investigation of mobile object recognition. NCUR'16.

Skills & Info

- **Programming Languages:** Python, Java, C++, C, C#, HTML, CSS/SASS, JavaScript, SQL, Matlab, R
- **Technologies:** PyTorch, NumPy, Caffe, OpenCV, Unity, Android, Confluence, Jira, MVC, JSP, Git, Latex
- **Coursework:** Computer Vision, Machine Learning, Semi-Supervised Learning, Generative Methods, Parallel Computing
- **Leadership:** VP, TEDxLafayette (2016 – 2017); Project Lead: AI Case Studies (2017), K-12 Database (2016), Mini-Facebook (2016)
- **Honors:** PBK (2018), PME (2018), UPE (2017), 2nd Place ACM ICPC Mid-Atlantic (2016), Lafayette EXCEL Scholar (2015 – 2017)
- **Teaching & Tutoring:** CS Tutor (2015 – 2018), Calculus Tutor (2016 – 2018), CS Teaching Assistant (2016 – 2017)