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

Adviser: 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 adjustable-size CNNs with 78% better fine-grained speed-accuracy trade-off at inference

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

- **Fashion Similarity Learning**: Designed a method to hierarchically learn subtle visual similarity of clothing items using Triplet networks. Outperformed prior methods at both the standard and proposed aesthetic compatibility classification
- **Poster Recognition**: Developed a poster identification system that extended a deep learning-based object detection framework. Outperformed traditional image retrieval methods (SIFT and ORB) implemented using, in part, OpenCV
- **Mobile Building Recognition**: Developed an on-device, real-time image retrieval algorithm for mobile platforms using OpenCV's feature extraction methods (ORB and BRISK). Created an Android tour guide app utilizing the algorithm

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 Piros, 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)