

Dzung V. Pham

CONTACT INFORMATION	Rm. 226, 140 Governors Drive Amherst, MA 01003 USA	<i>Mobile:</i> (+1) 413-629-9759 <i>E-mail:</i> dzungvpham@gmail.com <i>Website:</i> dzungvpham.github.io
RESEARCH INTERESTS	I am generally interested in AI/ML, with a particular focus on the security and privacy of AI/ML algorithms and systems. I use a variety of tools and ideas in my research, including adversarial AI/ML, differential privacy, optimization, cryptography, game theory, etc.	
EDUCATION	University of Massachusetts Amherst <i>MS/PhD in Computer Science</i> (GPA: 4.00) The Secure, Private Internet (SPIN) Research Group. Advisor: Prof. Amir Houmansadr	2022 - Present
	Williams College <i>B.A. in Computer Science & in Statistics (with Honors)</i> (GPA: 3.90) Thesis: <i>Exploring Variable Importance with Stacked Models</i> . Advisor: Prof. Richard D. De Veaux Honors: Magna cum laude, Sigma Xi, Phi Beta Kappa, Mu Sigma Rho Awards: Recipient of the 2019 Ward Prize for Best Project in Computer Science	2016 - 2020
PUBLICATIONS	<u>Dzung Pham</u> , Shreyas Kulkarni, Amir Houmansadr. "RAIFLE: Reconstruction Attack on Interaction-based Federated Learning." Currently under review. Quan Do, Kiersten Campbell, Emmie Hine, <u>Dzung Pham</u> , Alex Taylor, Iris Howley, Daniel Barowy. "Evaluating ProDirect Manipulation in Hour of Code." In <i>Proceedings of the 2019 ACM SIGPLAN SPLASH-E Symposium (SPLASH-E '19)</i> , Athens, Greece, October 2019.	
UNDERGRADUATE RESEARCH EXPERIENCES	Exploring Variable Importance with Stacked Models - Senior Thesis I investigated variable importance measures calculated from stacked models to see if they are more robust than those from the base models that form the stack. I focused on two model-agnostic methods, namely permutation importance and Sobol indices. Through an empirical evaluation via simulation (leveraging the H2O's AutoML framework and Williams College's HPC clusters), I observed that the diversity of the base models played an important role in the quality of the stacked model's variable importance. The thesis was done under the supervision of Prof. Richard De Veaux and is available at https://unbound.williams.edu/theses/islandora/object/studenttheses%3A1655 .	
	Fall Detection - Winter Research Project Inspired by recent research in video understanding, I designed and trained a two-stream convolutional neural network with transfer learning from MobileNetV2 to detect people falling in video input using Keras, TensorFlow and OpenCV. To achieve real-time inference, I replaced the optical flow stream with a Motion History Image stream. The project won the 2019 Ward Prize for Best Project in Computer Science at Williams College. Code is available at github.com/dzungvpham/fall-detection-two-stream-cnn .	Jan 2019

SWELL - Research Assistant**Dec 2018 - May 2019**

SWELL (<http://swell-lang.org>) is an original education-focused programming language/interface by Prof. Dan Barowy that incorporates *Prodirect manipulation* – a bidirectional link between source code and outputs. This allows the user to reason about the code by directly manipulating program outputs, which can in turn update the code. As an RA, I:

- Designed and implemented major parts of the language including the parser, interpreter, abstract syntax tree as well as the web programming user interface.
- Taught the language to 5th-grade students at Williamstown Elementary School and helped analyze the collected data to evaluate the language's effectiveness in teaching beginners how to code.

TEACHING
EXPERIENCES**Teaching Assistant - University of Massachusetts Amherst****2022 - Present**

Courses: Programming Methodology, Web Programming

Teaching Assistant - Williams College**2017 - 2020**

Courses: Statistical Learning & Data Mining, Regression & Forecasting, Principles of Programming Languages, Algorithm Design & Analysis, Computer Organization, Data Structures & Advanced Programming, Introduction to Computer Science.

PROFESSIONAL
EXPERIENCES**Facebook Inc.**, Seattle, WA, USA*Software Engineer – Machine Learning***2020 - 2022**

Worked on preventing fraud, scams, and harassment on Facebook Marketplace using ML.

*Software Engineer Intern***Summer 2018 & 2019**

Built two internal tools to support dozens of software release engineers with managing version releases and debugging software build failures.

Trained and deployed a ranking ML model to help Facebook employees discover internal job opportunities based on their career history, skills and preferences.

SERVICES

Computer Science Student Advisory Committee - Williams College**2018 - 2019**

Organized the first mock tech interview program in the Computer Science department at Williams College to help fellow students apply for software engineering jobs in the tech industry.