

Justin Dulay

University of Notre Dame ◊ Notre Dame, IN 46556
(314) · 810 · 9444 ◊ jdulay@nd.edu

EDUCATION

University of Notre Dame

June 2021 - Present

Ph.D. in Computer Science & Engineering
Advisor: Prof. Walter Scheirer
Dean's Fellow

Saint Louis University

August 2017 - May 2021

B.S. in Computer Science
Research Advisor: Prof. Abby Stylianou

RESEARCH INTERESTS

Psychophysics, Computer Vision, Machine Learning, Deep Learning, Algorithms

AWARDS & HONORS

Dean's Fellowship at Notre Dame

- *University-funded research and stipend for a min. of 5 years*

Vice President's Scholarship at Saint Louis University

- *Valued at over \$150,000 over 4 years*

James Costigan Fellowship at Saint Louis University

WORK EXPERIENCE

University of Notre Dame

June 2021 - Present

Graduate Research Assistant

Notre Dame, IN

- Worked with Dr. Scheirer on new computer vision research, specifically in visual psychophysics, cognitive science, reinforcement learning, and autonomous vehicles.
- Pre-print of work will be available soon.

Saint Louis University

May 2020 - May 2021

Research Assistant

St. Louis, MO

- Worked on state-of-the-art artificial intelligence image infilling techniques on occluded images, potentially creating virtually infinite training sets.
- Published two papers as an undergraduate at CVPR workshops, mostly in agriculture science and dataset curating.
- Created a iOS mobile app that utilized multiple cameras simultaneously in order to capture crops at different angles. It also utilized the LiDAR technology on the Apple iPhone 11 Pro Max.
- Research directly benefited TraffickCam, a non-profit designated to stop human trafficking using artificial intelligence to track down perpetrators.

MEDLaunch

September 2018 - April 2021

President

St. Louis, MO

- Led a student incubator of more than 50 medical and engineering students, managed finances of the organization, and strategized with a premier board of directors.

- Interviewed candidates, tracked performance, and committed to leading a diverse and equitable environment.

Centene Corporation

Software Developer Intern

May 2019 - May 2020

St. Louis, MO

- Wrote microservices in Go in a highly agile environment for Centene's TruCare NextGen project, a comprehensive insurance claims and health management platform.
- Worked stories from beginning to end – from development and peer review to deployments in production, utilizing a microservices architecture with Go, Jenkins, and Kubernetes.

SoHeart

Software Developer

May 2020 - October 2020

St. Louis, MO

- Worked on front end iOS Swift Development for a startup that specialized in developing an app to connect people in addiction recovery with care counselors and providers in a fresh, appealing, and dignified environment.

United States Food and Drug Administration

ORISE Fellow

May 2018 - August 2018

St. Louis, MO

- Developed methods for chemometrics of Raman spectral data for pharmaceutical assays, including machine learning, PCA, KNN, and PLS regression models.
- Utilized various backscattering and transmission Raman spectroscopic instruments.
- Drafted a scientific publication detailing a novel method to non-destructively screen for pharmaceutical degradation in compounding facilities.

PUBLICATIONS

Journal Publications

J.1. *submitted*

Peer-Reviewed Conference Workshop Papers

C.1. Justin Dulay, Chao Ren, Greg Rowles, Abby Stylianou, "The Sorghum-100 Dataset" to appear at the CVPR Workshop on Fine-Grained Visual Categorization (FGVC8), 2021

C.2. Chao Ren, Justin Dulay, Greg Rowles, Duke Pauli, Nadia Shakoor, Abby Stylianou, "Multi-resolution Outlier Pooling for Sorghum Classification" to appear at the CVPR Workshop on Agriculture Vision, 2021

TECHNICAL STRENGTHS

Computer Languages

Python, Swift, Go, C/C++, Java

Protocols

Agile, JSON, REST, HTTP

Databases

MySQL, MongoDB, Microsoft SQL

Skills

Project Management, Public Speaking, Writing

INVITED TALKS

Poster Presentations

"The Sorghum-100 Dataset" with Abby Stylianou, poster presentation at the CVPR Workshop on Fine-Grained Visual Categorization (FGVC8), Virtual, June 2021.

ACADEMIC SERVICE

Professional and Academic Membership

Student member of the IEEE

Academic Service

Reviewer, ECCV 2022