Dawson Do

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Education

University of California, Berkeley **2022-Present**
PhD (in progress) in Civil and Environmental Eng, Transportation Engineering
Advisor: Maria Laura Delle Monache

University of California, Berkeley **2022**
MS in Civil and Environmental Engineering
Advisor: Maria Laura Delle Monache

University of Maryland, College Park **2021**
BS in Civil Engineering & BS in Mathematics
University Honors

Montgomery Blair High School **2017**
Magnet Program

Experience

Research

University of California, Berkeley **Sept '21–Present**
PhD Student – Maria Laura Delle Monache, Dept. of CEE *Berkeley, CA*

- **2D second-order Model:** Studied the effect of the diffusion term on the conservative PDE with respect to traffic flow evolution. Programmed finite volume solver in Julia and verified results using microsimulation in Aimsun.
- **2D NEWS Model:** Translated existing C++ numerical method code into Matlab. Designed and advised semester project for Master's student where they added input features to the program.

University of Maryland, College Park **Aug '18–May '21**
Undergraduate Researcher – Gang-Len Chang, Dept. of CEE *College Park, MD*

- **Work Zone Signal Optimization:** Developed an iterative method using Mixed-Integer Linear Programming to optimize signal control with concurrent demand allocation for work-zone impacted networks. Investigating methods for real-time control updates in order to optimize driver route-choice.
- **Diverging Diamond Interchange:** Developed methods of optimizing signal control and coordination for unconventional interchanges using Mixed-Integer Linear Programming formulations. Additionally formulated approximate models for efficient signal design for practical usage.
- **Center for Traffic Safety and Operations** Part-time Fall and Spring semester, Full-time Winter and Summer.

University of Maryland, College Park **Sept '17–Jan '18**
Research Intern – Ahmet Aydelik, Dept. of CEE *College Park, MD*

- **Geotechnical:** Analyzed highway slopes of various soil substitutes to determine a sustainable substrate.

The George Washington University **May '16–Nov '16**
Research Intern – Catherine A. Forster, Dept. of Biological Sciences *Washington, D.C.*

- **New Dinosaur:** Described the brain case of a new and unique species.
- **Awards:** Regeneron Science Talent Search Scholar (Semifinalist)

Work

Kim Engineering **May '18–Aug '18**
Lab Technician Intern *Beltsville, MD*
Reviewed site plans and performed compaction and concrete inspections for geotechnical projects.

Publications

- Concurrent Optimization of Cycle Length, Green Splits, and Offsets for the Diverging Diamond Interchange D Do, YY Chen, & GL Chang, *Transp. Res. Rec.*, 2022

Under Review/Works in progress

last updated July 18, 2022

- A second-order model for macroscopic 2D Traffic Flow
  D Do, HNZ Matin, & ML Delle Monache

Scholarships

Stephen M. Evans, P.E. Memorial Scholarship **2020/2021**
American Society of Highway Engineers

Leidos Corporate Partner Scholarship **2018/2019**
A. James Clark School of Engineering

Skills

Primary	Secondary
Languages: Julia, Python, R, Matlab, LaTeX, HTML, JavaScript	Java
Engineering: XPress, Minitab, Vissim	Aimsun, Transyt7f, TSIS
Misc: Photoshop, Illustrator, InDesign	

Activities

UMD Puzzle Club **September '17–'21**
President, Project Lead
Lead an online competition with ~800 participants across ~300 teams: `https://2021.umdpuzzle.club/`. Write logic/wordplay puzzles of varying complexity for UMD Puzzlehunts. Design and compose all official club documents and puzzles.

American Concrete Institute **Feb '18–June '19**
UMD Competition Team
- **Mortar Flowability Competition 2019:** Designed mortar mix and attended ACI convention in Québec City, Québec, Canada.
- **Pervious Concrete Competition 2018:** Designed permeable mix and attended ACI convention in Las Vegas, NV.