

EDUCATION

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| University of Pennsylvania, School of Engineering and Applied Sciences | Philadelphia, PA |
| Master of Science in Engineering, Data Science | <i>December 2022</i> |
| Temple University, Honors Program | Philadelphia, PA |
| Bachelor's in Actuarial Science, Magna Cum Laude | <i>May 2015</i> |

WORK EXPERIENCE

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| Volpe Research Center, U.S. Department of Transportation | Cambridge, MA |
| Management and Program Analyst, GS-0343-13 (40 hours/week) | <i>June 2023 - Present</i> |
| ○ Serves as data scientist for the Volpe Safety Measurement and Analysis Enterprise, leading data projects aimed at improving road safety by measuring the effectiveness of safety systems and evaluating accident risk factors. | |
| ○ CCFP Sample Design and Analysis Plan: Led a team four statisticians who designed the research plan of the Crash Causal Factors Program, a \$30 million research project aimed at reducing fatalities in U.S. truck crashes. | |
| ○ InterpretML Study: Used InterpretML's Explainable Boosting Machine to identify factors contributing to fatality in over 3 million truck crashes recorded in Federal Motor Carrier Safety Administration (FMCSA)'s MCMIS database and presented the findings to the FMCSA Crash Analytics Division Chief. | |
| ○ Roadside Inspection Effectiveness Model: Used R and SQL to apply regression analyses and discover statistically significant association between higher inspection rates and greater reduction in crash rates among U.S. motor carriers. Presented the study to the FMCSA Associate Administrator of Office of Research & Registration. | |
| ○ Fraud Audit Prioritization Algorithm: Used Python and SymPy to create an algorithm applying probability theory and prioritizing audit of high risk commercial drivers' license (CDL) training providers for FMCSA's CDL division. Presented the model and results to the FMCSA CDL Division Chief. | |
| ○ DOD SDDC PowerBI Dashboard: Used SQL, PowerQuery, and PowerBI to establish a pipeline integrating TSMART and MCMIS databases and automate report of key safety performance metrics of commercial carriers contracted by the DoD's Surface Distribution and Deployment Command. | |
| ○ Thematic Analysis of U.S. Train Derailments: Used qualitative methods to analyze descriptive data of over 1,600 train derailments and discover causal themes for derailments among U.S. transit agencies. Presented the analysis to the Federal Transit Administration (FTA) Associate Administrator for Transit Safety and Oversight. | |
| ○ PowerBI Course: Developed and taught a 4-week PowerBI course to 30+ Department of Transportation program analysts throughout the United States, improving their data processing and visualization proficiency through live virtual classroom and office hours sessions. | |
| Jardine Lloyd Thompson Re | Philadelphia / Jakarta / Singapore |
| Manager, Strategic Advisory and Analytics (40 hours/week) | <i>August 2015 - July 2018</i> |
| ○ Actuarial Analyses: Executed actuarial analyses into JLT Re's client risk portfolios and financial statements to structure reinsurance contracts and quantify cost of risk transfers. Risk portfolios analyzed included private and public entity risks such as property, general liability, lawyer's liability, medical malpractice, and inland marine. | |
| ○ Stakeholder Management: Built relationships with clients, brokers, and actuaries to understand client risk goals, communicate data needs, discuss methodologies, and conduct peer reviews on analytical products. Authored analysis reports and used data visualization to communicate findings and recommendations. | |
| ○ ETL and Data Quality Management: Performed routine extract, transform, and load tasks to prepare and transform client datasets and industry aggregated data for actuarial analyses. Enforced JLT Re's data quality requirements to ensure highest standards in the analytical products. | |

INTERNSHIPS

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| Merck & Co., Inc. | Kenilworth, NJ |
| Supply Chain AI/ML Intern (40 hours/week) | <i>June 2022 - August 2022</i> |
| ○ Warehouse Inventory Forecasting Model: Used Scikit-Learn on Merck's SAP dataset to train neural net and random forest forecasting models designed to anticipate warehouse overflows. The models provided a 1-year forecast of a warehouse's inventory levels based on the 1-year production schedule of its associated drug-manufacturing plant. Presented the product to Merck's Executive Vice President of Supply Chain. | |

PROJECTS

<https://psitumorang.github.io/portfolio>

SKILLS AND CERTIFICATIONS

- Python, R, SQL, OracleDB, MySQL, PowerBI, Dataiku, Git, LaTeX
- **Society of Actuaries Exams Passed:** P (Probability), FM (Financial Mathematics)
- **GRE:** Q170, V164

MILITARY EDUCATION

- **Company Commanders and First Sergeants' Course**, Fort Knox, KY, November 2023
- **Logistics Captains' Career Course**, Fort Lee, VA, April 2023
- **Logistics Basic Officer Leaders' Course**, Fort Lee, VA, June 2020
- **Officer Candidate School**, Fort Benning, GA, January 2020

MILITARY EXPERIENCE

United States Army Reserve

- **77th Sustainment Brigade** Joint Base McGuire-Dix-Lakehurst, NJ
Distribution Section Head, Support Operations (8 hours/week) *November 2024 - Present*
 - Oversees a team of nine logisticians in integrating materiel and transportation knowledge to build the 77th Sustainment Brigade's theater distribution operations plan in a combat environment. Serves as technical advisor to the brigade on materiel management and supply distribution operations.
- **C Company, 3-518 Infantry Regiment** Blackwood, NJ
Commanding Officer (12 hours/week) *March 2023 - November 2024*
 - Supervised 25+ drill sergeants and drill sergeant candidates in planning and executing training events aimed at improving physical fitness and soldier skills proficiency among junior enlisted soldiers in New Jersey and neighboring states. Planned and assigned military education and active duty assignments for the unit's drill sergeants in advocacy of their readiness and continued professional growth.
- **Headquarters Company, 77th Sustainment Brigade** Joint Base McGuire-Dix-Lakehurst, NJ
Executive Officer (12 hours/week) *June 2020 - February 2023*
 - Administered a company of approximately 200 reservist soldiers. Led, planned, and executed weapons qualifications operations, physical training events, and unit development initiatives to improve and maintain unit proficiency in performing its key tasks.
- **223rd Transportation Company** Newtown Square, PA
Maintenance Systems Administrator (8 hours/week) *September 2013 - March 2016*
 - Led a team of five soldiers in maintaining 30+ tactical vehicles. Collaborated with unit motorpool supervisor, maintenance technicians, and section leaders to understand operational needs and communicate maintenance status of unit vehicles. Authorized the release and use of unit vehicles and issuance of military drivers' licenses.
- **Bagram Supply Support Activity, 101st Airborne Division** Bagram, Parwan, Afghanistan
Non-Commissioned Officer in Charge (84 hours/week) *December 2012 - September 2013*
 - Supervised the daily operations of Bagram Supply Support Activity, which was the largest supply warehouse in the U.S. Army. The warehouse supported roughly 750 U.S. military units, employed over 200 civilian contractors, and stored approximately \$650 million in U.S. government property.
 - Served as project manager for a team of 20 soldiers and 10 local nationals in a four-month construction project of new warehouse storage shelves. The \$5 million project roughly doubled storage capacity, improved employees' ability to organize and store materials, and expedited material fulfillment to supported units.
- **157th Combat Sustainment Support Battalion** Willow Grove, PA
Logistics Specialist (8 hours/week) *March 2010 - December 2012*