

Curriculum Vitae

Hieu Trung Bui

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EDUCATION

- Ph.D., University of Arkansas, Expected: Summer 2024, Industrial Engineering
- M.S., University of Arkansas, 2019, Industrial Engineering
- M.S., University of Arkansas, 2017, Operations Management
- B.S., University of Arkansas, 2015, Industrial Engineering

ACADEMIC EXPERIENCE

University of Arkansas
Graduate Research Assistant

Fayetteville, AR
August 2018 – present

- **U.S. Army Corp of Engineers project:** (1) Cleaned and analyzed extensive historical vessel data, (2) developing machine learning models to forecast quarterly commodity flows at port terminals. (3) Created visualizations to aid in planning and operations.
- **University of Arkansas for Medical Sciences project:** Analyzed anonymized patient data to build a long short-term memory (LSTM) network model for forecasting the weekly demand for surgical procedures, aiding in hospital resource planning and scheduling.
- **Maritime Transportation Research and Education Center project:** Developed an optimization model to maximize the expected yield of rice farms in Arkansas under scenarios where the amount and timeliness of fertilizer delivery are affected by a disrupted transportation network.
- **J.B.Hunt project:** (1) Created and tested an optimization model to improve the logistics of moving empty containers by addressing uncertainties in transit times. (2) Analyzed cost impacts and developed visualization tools for better decision-making and operational efficiency.
- **Air Force Research Laboratory project:** (1) Implemented a closed-loop control system using a thermal flow rate sensor to enhance the additive manufacturing process of epoxy and chopped carbon fiber composites. (2) Developed methods for local height adjustment and printing parameter manipulation to improve print quality and material properties.

University of Arkansas
Graduate Teaching Assistant

Fayetteville, AR

- INEG 3513 - Manufacturing Processes
- INEG 4683 - Decision Support in Industrial Engineering

Spring 2021
Fall 2022

PUBLICATIONS & PRESENTATIONS

Refereed Journal Publications

1. **Bui, H.**, Eksioglu, S., Proano, R., & Pinkley, S. N. (2024). An analysis of COVID-19 vaccine hesitancy in the U.S. *IISE Transactions*, 1–22.
2. **Bui, H.**, Eksioglu, S., Villafranca, A., Sanford, J. A., & Sexton, K. W. (2023). A long short-term memory model for forecasting the surgical case volumes at a hospital. *IISE Transactions on Healthcare Systems Engineering*, 13(3), 226–236.
3. **Bui, H.**, Pierson, H.A., Nurre, S.G. & Sullivan K.M. (2021). Toolpath planning for multi-gantry additive manufacturing, *IISE Transactions*, 53:5, 552-567 (*IISE Transactions 2022 Design & Manufacturing Best Application Paper Award*).

Conference Proceedings

1. **Bui, H.**, Eksioglu, S., & Proano, R. (2024). Evaluating the impact of vaccine hesitancy on the allocation of vital resources during COVID-19 pandemic, *Proceedings of the IISE Annual Conference & Expo 2024 (Under Review)*.
2. **Bui, H.**, Eksioglu, S., Pinkley, S. N., Proano, R., & Liu, X. (2022). An analysis of the impacts of social media on COVID-19 vaccine hesitancy in the U.S. *Proceedings of the IISE Annual Conference & Expo 2022*.
- 3.
4. **Bui, H.**, Pierson, H.A., Nurre, S.G. & Sullivan K.M. (2019). Tool path planning optimization for multi-tool additive manufacturing. *Procedia Manufacturing*, 39, 457–464.

Presentations (Names in **bold** are the speakers.)

1. **Bui, H.**, Eksioglu, S., Proano, R. “Evaluating the Impact of Vaccine Hesitancy on the Allocation of Vital Resources During COVID-19 Pandemic.” *2024 IISE Annual Conference and Expo*. Montreal, Canada, May (2024).
2. **Bui, H.**, Eksioglu, S., Proano, R. “Tackling Vaccine Hesitancy Via Analytical Models.” Poster presentation. *Arkansas Bioinformatics Consortium*. Little Rock, AR, Feb. (2024) (*3rd place in Best Poster Award*).
3. **Bhurtyal, S.**, Bui, H., Hernandez, S., Eksioglu, S. “Prediction of Waterborne Commerce Statistics from Automatic Identification System Data using Machine Learning.” *2024 Annual Meeting of Transportation Research Board*. Washington, DC, Jan. (2024).
4. **Bui, H.**, Eksioglu, S., Proano, R. “Design Customized and Targeted Community-Based Interventions via Data-Driven Stochastic Optimization Models.” *2023 IISE Annual Conference and Expo*. New Orleans, LA, May (2023).
5. **Bui, H.**, Eksioglu, S., Proano, R. “Machine Learning Algorithms to Analyze COVID-19 Vaccine Hesitancy Behavior at the County Level in the U.S.” *2022 INFORMS Annual Meeting*. Indianapolis, IN, Oct. (2022).
6. **Bui, H.**, Eksioglu, S., Villafranca, A.A. “An LSTM Model for Time Series Forecasting of Surgical Case Volume at a Hospital.” Poster presentation. *Southeast Symposium on Contemporary Engineering Topics*. Little Rock, AR, Sept. (2022).
7. **Bui, H.**, Eksioglu, S., Proano, R., Nurre, S.G. “A Data-Driven Framework for Studying COVID-19 Vaccine Hesitancy in the U.S.” *2022 IISE Annual Conference and Expo*. Seattle, WA, May (2023).
8. **Bui, H.**, Eksioglu, S., Villafranca, A.A. “An LSTM Model for Time Series Forecasting of Surgical Case Volume at a Hospital.” Poster presentation. *Center for Excellence in Logistics and Distribution Symposium*. Columbia, MO, March (2022).
9. **Bui, H.**, Pierson, H.A., Nurre, S.G., Sullivan, K.M. “Tool Path Planning Optimization for Multi-Tool Additive Manufacturing.” *2019 International Conference on Production Research*. Chicago, IL, Aug. (2019).
10. **Bui, H.**, Pierson, H.A., Nurre, S.G., Sullivan, K.M. “Tool Path Planning Optimization for Multi-Tool Additive Manufacturing.” *2019 IISE Annual Conference and Expo*. Orlando, FL, May (2019).

INVOLVEMENT

- Member of the Institute of Industrial and Systems Engineers (IISE) and Institute for Operations Research and the Management Sciences (INFORMS).
- Member of Alpha Pi Mu, Industrial Engineering Honor Society.
- Volunteer for various events on campus, such as FLL Razorback, Razorback Reveal, and GirlTREC.

SKILLS & INTERESTS

Programming Languages: Python, SQL, C#, VBA, and MATLAB.

Language Proficiency: Vietnamese (native), English (fluent).

Software Proficiency: Proficient in AutoCAD, Autodesk Inventor, and Fusion360. Advanced skills in the Microsoft Office Suite, including Excel, PowerPoint, and Word. Optimization solvers like Gurobi and CPLEX.

Specialized Technical Skills:

- Experienced in data analysis and visualization for insightful data analysis and compelling visual storytelling.
- Skilled in developing optimization models for logistics, manufacturing, and resource allocation challenges.
- Hands-on experience with frameworks like TensorFlow and scikit-learn for predictive modeling and data mining.
- Knowledge in applying additive manufacturing techniques for prototyping and toolpath planning.

HONORS AND AWARDS

- Northwest Arkansas Community College Dean's List 2012
- Awarded Outstanding Design Team in Industrial Engineering Senior Design 2015
- International New Arkansas Non-Resident Tuition Award 2013 – 2016
- AAIE Duane & Mary Neal Scholarship 2015 – 2016
- AAIE Jim & Pat Hubbard Scholarship 2015 – 2016
- IISE Transactions 2022 Design & Manufacturing Best Application Paper Award 2022
- Arkansas Academy of Industrial Engineering Graduate Scholarship 2022
- Carolyn Clark Langston & Dr. Harold D. Langston Endowment for Technical Outreach Scholarship 2022
- University of Arkansas - Industrial Engineering Department Scholarship 2022 & 2023
- Reginald R. "Barney" & Jameson A. Baxter Graduate Fellowship 2024
- 3rd place in the Best Poster Award Graduate Student category at AR-BIC 2024