



## Matthew Sato

Ph.D. Student in Civil and Environmental Engineering, admitted Autumn 2021

### Publications

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#### PUBLICATIONS

- **A Mobile Robot Framework for Learning to Detect New Objects With Large Language Models** *ASME. J. Comput. Inf. Sci. Eng.*  
Sato, M. M., Law, K. H.  
2026; 26 (6): 061007
- **A Mobile Robot Framework for Learning to Detect New Objects With Large Language Models** *45th Computers and Information in Engineering Conference (CIE)*  
Sato, M. M., Law, K. H.  
2025: V02BT02A026
- **Identification and Interpretation of Melt Pool Shapes in Laser Powder Bed Fusion with Machine Learning** *SMART AND SUSTAINABLE MANUFACTURING SYSTEMS*  
Sato, M. M., Wong, V. W. H., Yeung, H., Witherell, P., Law, K. H.  
2024; 8 (1)
- **EXPLAINABILITY OF LASER POWDER BED FUSION MELT POOL CLASSIFICATION USING DEEP LEARNING**  
Sato, M. M., Wong, V., Law, K. H., Yeung, H., Witherell, P., AMER SOC MECHANICAL ENGINEERS  
AMER SOC MECHANICAL ENGINEERS.2023
- **Multi-fidelity Modeling for Uncertainty Quantification in Laser Powder Bed Fusion Additive Manufacturing** *INTEGRATING MATERIALS AND MANUFACTURING INNOVATION*  
Nath, P., Sato, M., Karve, P., Mahadevan, S.  
2022
- **Multi-Objective Optimization Under Uncertainty of Part Quality in Fused Filament Fabrication** *ASCE-ASME JOURNAL OF RISK AND UNCERTAINTY IN ENGINEERING SYSTEMS PART B-MECHANICAL ENGINEERING*  
Kapusuzoglu, B., Nath, P., Sato, M., Mahadevan, S., Witherell, P.  
2022; 8 (1)
- **Anomaly Detection of Laser Powder Bed Fusion Melt Pool Images Using Combined Unsupervised and Supervised Learning Methods** *42nd Computers and Information in Engineering Conference (CIE)*  
Sato, M. M., Wong, V. W., Law, K. H., Yeung, H., Yang, Z., Lane, B., Witherell, P.  
2022: 10
- **Process Optimization Under Uncertainty for Improving the Bond Quality of Polymer Filaments in Fused Filament Fabrication** *JOURNAL OF MANUFACTURING SCIENCE AND ENGINEERING-TRANSACTIONS OF THE ASME*  
Kapusuzoglu, B., Sato, M., Mahadevan, S., Witherell, P.  
2021; 143 (2)