Mansur Maturidi Arief

Ph.D. Student, CMU Safe AI Lab

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RESEARCH INTERESTS

Machine learning, simulation and modeling, rare-event simulation, intelligent transportation systems

EDUCATION

Carnegie Mellon University, Pittsburgh PA, USA	2018–present
Ph.D. in Mechanical Engineering	
University of Michigan, Ann Arbor MI, USA	2016–2018
M.S.E. in Industrial and Operations Engineering	
Sepuluh Nopember Institute of Technology (ITS), Surabaya, Indonesia	2010–2014
B.E. in Industrial and Systems Engineering	

EMPLOYMENT & INTERNSHIPS

CR/RSI1-NA, Robert Bosch LLC (Bosch)	2021
Machine Learning Research Intern, supervised by Dr. Ji Eun Kim	
Transportation Research Institute, University of Michigan	2017–2018
Research Assistant, supervised by Dr. Ding Zhao	
Innovation and Business Venture Agency, ITS	2015–2016
Associate Consultant, supervised by Dr. I Ketut Gunarta	
Logistics and Supply Chain Management Laboratory, ITS	2012–2016
Research Assistant, supervised by Prof. I Nyoman Pujawan	
Center for Transportation Research, ITS	2012–2014
Research Assistant, supervised by Prof. Iwan Vanany	
Land Transport Division, Kamadjaja Logistics	2013
Simulations Intern, supervised by Dr. Dody Hartanto	

AWARDS & CREDENTIALS

■ *Best Poster*, Michigan Student Symposium on Interdisciplinary Statistical Sciences (MSSISS), Univ. of Michigan	2018
■ *Best Paper*, Power and Energy Symposium, International Conference on Science and Technology (ICST)	2018
■ *MicroMasters in Supply Chain Management,* MITx on edX	2018
■ *LPDP Awardee*, PK-67, Indonesian Endowment Fund for Education	2016
■ *1st Place,* National Industrial Engineering Challenge, University of Andalas	2014
■ *2nd Place,* National Industrial Engineering Challenge on Small and Medium Enterprises, University of Brawijaya	2014
■ *5th Place*, National Industrial Engineering Challenge, University of Indonesia	2013
■ *Program Beasiswa Santri Berprestasi (PBSB) Fellowship,* Indonesian Ministry of Religious Affairs	2010
■ *AFS-USA Kennedy-Lugar Youth Exchange Studies (YES) Awardee*, U.S. Department of State	2008

TEACHING EXPERIENCE

- *Teaching Assistant,* Trustworthy AI Autonomy (24784), Carnegie Mellon University — 2021
- *Teaching Assistant,* Intro to Scientific Computing (24781), Carnegie Mellon University — 2020
- *Teaching Assistant,* Supply Chain Management, IndonesiaX — 2016
- *Teaching Assistant,* Distribution Management, ITS — 2014
- *Teaching Assistant,* Industrial Systems Design, ITS — 2013

PUBLICATIONS

- Ziyad, Muhammad, Zulvah, Mushonnifun Faiz Sugiarto, and **Mansur M. Arief**. "Towards a Safety-aware Aircraft Engine Maintenance Framework via Data-driven Prognostics Simulation." *Under review*.

- **Arief, Mansur M.**, Zhiyuan Huang, Guru KS Kumar, Yuanlu Bai, Shengyi He, Wenhao Ding, Henry Lam, and Ding Zhao. "Deep Probabilistic Accelerated Evaluation: A Robust Certifiable Rare-Event Simulation Methodology for Safety-Critical Black-Box Autonomy." *Proceedings of the 24th International Conference on Artificial Intelligence and Statistics (AISTATS).* PMLR: Volume 130, 2021.

- Arief, Hasan A., **Mansur M. Arief**, Guilin Zhang, Ulf Indahl, Håvard Tveite, and Ding Zhao. " SAnE: Smart annotation and evaluation tools for point cloud data". In *IEEE Access.* IEEE, 2020.

- Chen, Rui, **Mansur M. Arief**, Weiyang Zhang, and Ding Zhao. "How to Evaluate Self-Driving Testing Ground? A Quantitative Approach." *IEEE Transactions on Intelligent Transportation System*, DOI: 10.1109/TITS.2020.2991757. IEEE, 2020.

- Huang, Zhiyuan, **Mansur M. Arief**, Henry Lam, and Ding Zhao. "Assessing Modeling Variability in Autonomous Vehicle Accelerated Evaluation." *Proceedings of the 22nd International Conference on Intelligent Transportation System (ITSC).* IEEE, 2019.

- Guo, Yaohui, Vinay Varma Kalidindi, **Mansur M. Arief**, Wenshuo Wang, Jiacheng Zhu, Huei Peng, and Ding Zhao. "Modeling Multi-Vehicle Interaction Scenarios Using Gaussian Random Field." *Proceedings of the 22nd International Conference on Intelligent Transportation System (ITSC).* IEEE, 2019.

- Liu, Zuxin, **Mansur M. Arief**, and Ding Zhao. "Where Should We Place LiDARs on the Autonomous Vehicle? An Optimal Design Approach." *Proceedings of the 2019 International Conference on Robotics and Automation (ICRA)*, pp. 2793-2799. IEEE, 2019.

- Arief, Hasan A., **Mansur M. Arief**, Manoj Bhat, Ulf Indahl, Håvard Tveite, and Ding Zhao. "Density-Adaptive Sampling for Heterogeneous Point Cloud Object Segmentation in Autonomous Vehicle Applications." In *Proceedings of the 2019 IEEE Conference on Computer Vision and Pattern Recognition Workshops*, pp. 26-33. 2019.

- Huang, Zhiyuan, Yaohui Guo, **Mansur M. Arief**, Henry Lam, and Ding Zhao. "A versatile approach to evaluating and testing automated vehicles based on kernel methods." *Proceedings of the 2018 Annual American Control Conference (ACC)*, pp. 4796-4802. IEEE, 2018.

- Oktavian, Muhammad Rizki, Diana Febrita, and **Mansur M. Arief**. "Cogeneration Power-Desalination in Small Modular Reactors (SMRs) for Load Following in Indonesia." *Proceedings of the 4th International Conference on Science and Technology (ICST)*, pp. 1-6. IEEE, 2018.

- Huang, Zhiyuan, **Mansur M. Arief**, Henry Lam, and Ding Zhao. "Synthesis of Different Autonomous Vehicles Test Approaches." *Proceedings of the 21st International Conference on Intelligent Transportation Systems (ITSC)*, pp. 2000-2005. IEEE, 2018.

- **Arief, Mansur M.**, Peter Glynn, and Ding Zhao. "An Accelerated Approach to Safely and Efficiently Test Pre-Production Autonomous Vehicles on Public Streets." *Proceedings of the 21st International Conference on Intelligent Transportation Systems (ITSC)*, pp. 2006-2011. IEEE, 2018.

- Pujawan, Nyoman, **Mansur M. Arief**, Benny Tjahjono, and Duangpun Kritchanchai. "An integrated shipment planning and storage capacity decision under uncertainty: A simulation study." *International Journal of Physical Distribution & Logistics Management* 45, no. 9/10 (2015): 913-937.

PRESENTATIONS & TALKS

- 24th International Conference on Artificial Intelligence and Statistics (AISTATS), Virtual — 2021
- SIAM Conference on Computational Science and Engineering (CSE21), Virtual — 2021
- INFORMS Annual Meeting, Virtual — 2020
- 2nd Annual Workshop of Safe AI Lab, Pittsburgh, USA — 2020
- 22nd International Conference on Intelligent Transportation Systems (ITSC), Auckland, NZ — 2019
- Workshop on Rare Events and Driving Scenario Modeling with Uber ATG, Pittsburgh, USA — 2019
- 21st International Conference on Intelligent Transportation Systems (ITSC), Hawaii, USA — 2018
- Workshop on Safe AI, Pittsburgh, USA — 2018
- 8th International Conference on Industrial Engineering and Operations Management (IEOM), Bandung, IDN — 2018

ACADEMIC SERVICES

- *Reviewer,* 24th International Conference on Intelligent Transportation Systems (ITSC) — 2021
- *Organizer,* Security and Safety in Machine Learning Systems, ICLR Workshop — 2021
- *Reviewer,* 24th International Conference on Artificial Intelligence and Statistics (AISTATS) — 2021
- *Reviewer,* 22nd International Conference on Intelligent Transportation Systems (ITSC) — 2019
- *Reviewer,* 21st International Conference on Intelligent Transportation Systems (ITSC) — 2018
- *Organizer,* 6th International Conference on Operations and Supply Chain Management (OSCM) — 2014
- *Research Assistant Coordinator,* Logistics and Supply Chain Management (LSCM) Laboratory, ITS — 2013
- *Research and Teaching Assistant,* Logistics and Supply Chain Management (LSCM) Laboratory, ITS — 2012

OTHER SERVICES

- *President,* Indonesian Students at CMU (PERMIAS CMU) — 2021
- *Vice President,* Indonesian Students at CMU (PERMIAS CMU) — 2020
- *Executive Board,* Indonesian Supply Chain and Logistics Institute, National Student Chapter — 2018
- *Executive Board*, INFORMS Student Chapter at University of Michigan — 2017
- *Executive Board*, Indonesian Student Association at University of Michigan (PERMIAS Michigan) — 2017
- *President*, Community of Santri Scholars of Ministry of Religious Affairs (CSSMoRA) at ITS — 2012
- *Volunteer,* AFS Bina Antar Budaya, Makassar Chapter — 2009