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## PROFESSIONAL SUMMARY

Lucas is a PhD Researcher at TU Delft. He currently researches the implementation of meaningful human control for automated vehicles. Previously he worked as a lecturer at Calvin Institute of Technology in the IT & Big Data Analytics Department. He was a certified solution specialist at Esri Indonesia. He also holds Associate Data Scientist certification. He earned his BSc and MSc from Institut Teknologi Bandung. In his free time, he shares his works on social media (medium, github, and youtube)

## EDUCATIONS

<b>TU Delft (Ph.D. Candidate)</b> Thesis: <i>The Methodological Development of Control Theory of Meaningful Human Control for Automated Driving Systems (ADS)</i>	Delft, Netherlands Apr 2022 - Now
<b>Bandung Institute of Technology (M.Sc.)</b> M.Sc. Instrumentation & Control (3.96/4.00) Thesis: <i>PID Robust <math>H_\infty</math> Integral-Backstepping Control with Optimal Control Strategy for Automated People Movers (APM)</i>	Bandung, Indonesia Aug 2017 - Apr 2019
<b>Bandung Institute of Technology (B.Sc.)</b> B.Sc. Engineering Physics (3.48/4.00) Thesis: <i>Designing Operator Training Simulator for Finishing Mill Unit at Hot Strip Mill Plant</i>	Bandung, Indonesia Aug 2012 - Oct 2016

## RESEARCH & PROFESSIONAL EXPERIENCES

<b>IT &amp; Big Data Analytics Dept., Calvin Institute of Technology</b> <ul style="list-style-type: none"><li>List of teaching activities:<ul style="list-style-type: none"><li>Probability and Statistics</li><li>Computer Networks</li><li>Introduction to Artificial Intelligence</li><li>Data Preprocessing</li><li>Deep Learning</li><li>Natural Language Processing</li></ul></li><li>List of research projects:<ul style="list-style-type: none"><li><b><i>Development of control system for low-cost ventilator system amid COVID-19 pandemic.</i></b> Fully funded by PT Cahaya Mas Cemerlang</li></ul></li><li>Speakers: Invited speaker at IK-5111 Big Data Analysis &amp; Visualization, ITB. Topic: The application of Big Data in GIS Technology</li></ul>	Jakarta, Indonesia Aug 2020 - Apr 2022
<b>Esri Indonesia</b> <ul style="list-style-type: none"><li>Joined the company as a solution engineer. Promoted to be a solution specialist in 2020. The main task is to deliver proof-of-concept (POC) regarding the application of spatial data science in natural resources industry</li><li>Specialization: Python, IoT, Statistics, Spatial Data Science</li><li>Achievements:<ul style="list-style-type: none"><li>Best Employee 2020</li></ul></li></ul>	Jakarta, Indonesia Apr 2019 - Oct 2020

- Delegation of Esri Indonesia at Developer and Partner Summit 2020, California, United States
  - Speaker from Esri Indonesia at Python Conference Indonesia 2019, Surabaya
  - Plenary session speaker: Oil & Gas Industry Forum, Esri Indonesia User Conference 2019, Raffles Jakarta Hotel
- Supervised undergraduate students during their interns and shared the results in international conferences, our works:
  - ***Site Selection of Retail Shop Based on Spatial Analysis and Machine Learning.***  
Published in International Conference on Advanced Computer Science and Information Systems (ICACSIS) 2020
  - ***Predicting Mineral Sites through Machine Learning Model of Buffer Zone Geophysical and Geochemical Trends.***  
Published in ICACSIS 2020
  - ***Hazard Identification and Risk Analysis of Oil & Gas Pipelines with GIS methods.***  
Published in Seminar Nasional Geomatika 2020

#### Engineering Physics Dept., Bandung Institute of Technology

Bandung, Indonesia  
Oct 2016 – Apr 2019

- Certified trainer and curriculum developer of control & automation courses for industry experts and academics
- Consultant for electrical train and power plants automation projects.
- List of teaching and tutor activities:
  - TF-4029: Robust and Non-linear Control
  - TF-4088: Special Topic: Industrial Automation
  - IK-6117: Industrial Informatics
  - IK-6004: Robust and Optimal Control
  - Laboratory assistant for graduate and undergraduate students in Artificial Intelligence, Control, and Automation Laboratory
- List of academic research:
  - ***Optimal Control for Self-Steering Truck System.***  
Fully funded by Ministry of Research, Technology, and Higher Education, Republic of Indonesia
  - ***LQR Control for Distillation Tower System.***  
Fully funded by Department of Engineering Physics, ITB
  - ***Gray-Box Modelling and Validation of Automated People Mover System (APMS).***  
Fully funded by Ministry of Research, Technology, and Higher Education, Republic of Indonesia

#### TRAININGS/SHORT COURSES

##### TRAIL Research School

- Machine Learning Approach for Discrete Choice Analysis July 2022

##### Coursera

- Convolutional Neural Networks by DeepLearning.AI November 2021
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization by DeepLearning.AI November 2021
- Neural Networks and Deep Learning by DeepLearning.AI October 2021

##### Indonesian Computer Science Higher Education Association

- Training for Trainers Micro credential Certification: Data Science – Artificial Intelligence February 2021

**Ministry of Communication and Information Technology**

- Data Science Training: Artificial Intelligence

November 2021

**University of Toronto**

- Introduction to Self-Driving Cars

September 2020

**TRAININGS**

**Esri Developer Summit Pre-Summit Training**

- Geospatial Artificial Intelligence Training

Redlands, United States  
March 2020

**Microsoft Training**

- Azure Architecture

Jakarta, Indonesia  
February 2020

**PUBLICATIONS**

**Published Paper/Journal**

- E.Joelianto, L.E. Suryana, A. Widyotriatmo, and Y.A. Hidayat "*Optimal control strategy for automated people mover system (APMS) using robust  $H^\infty$  integral-backstepping MIMO PID controller,*" (in publication process)
- L. E. Suryana, E. Joelianto, and Y. A. Hidayat, "*Grey-Box Modelling and Validation of APMS (Automated People Mover System) Train,*" 2020 International Journal on Electrical Engineering and Informatics, Bandung, Indonesia, 2020, Volume 12 Number 4, DOI: 10.15676/ijeei.2020.12.4.15
- J. M. C. D. Teknik and L. E. Suryana, "*Predicting Mineral Sites through Machine Learning Model of Buffer Zone Geophysical and Geochemical Trends,*" 2020 International Conference on Advanced Computer Science and Information Systems (ICACSIS), Depok, Indonesia, 2020, pp. 387-392, DOI: 10.1109/ICACSIS51025.2020.9263116.
- K. Z. Mazhi, L. E. Suryana, A. Davi and W. R. Dewi, "*Site Selection of Retail Shop Based on Spatial Analysis and Machine Learning,*" 2020 International Conference on Advanced Computer Science and Information Systems (ICACSIS), Depok, Indonesia, 2020, pp. 135-140, DOI: 10.1109/ICACSIS51025.2020.9263156.
- L. E. Suryana and E. Joelianto, "*Optimal Control for Self-Steering of a Truck System,*" 2018 5th International Conference on Electric Vehicular Technology (ICEVT), Surakarta, Indonesia, 2018, pp. 21-24, DOI: 10.1109/ICEVT.2018.8628343.

**Medium (<https://lucaselbert.medium.com/>)**

- Extracting GoPro GPS and other Telemetry Data (13.7K views)
- Road Crack Detection – General Workflow (1.6K views)
- Which one is better: Reinforcement Learning or Model Predictive Control? Inverted Pendulum-Case\* (1.2K views)
- Building footprint extraction in a dense area with MaskRCNN – Jakarta, Indonesia (1.1 Kviews)
- Updating Service – ArcGIS API for Python (0.3K views)
- The derivation of the Linear Regression coefficients (0.3K views)
- Deep Learning with Location Analysis (0.2K views)

**ORGANIZATIONS**

- Head of Christian Student Fellowship in Bandung Institute of Technology (2015-2016)
- Head of National Student Competition: Industry 4.0 in collaboration with Siemens Indonesia (2018)
- Head of ITB Data Club (2019)

**PROFESSIONAL CERTIFICATIONS**

- MTA: Introduction to Programming Using Python (2019)
- Esri Enterprise Administration Associate 10.5 (2019)
- Certified Associate Data Scientist by LSP-BNSP (2021)
- Certified BNPT accessors (2018)