Ravialdy Hidayat

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SUMMARY

I am a professional having 3+ year experiences in building and deploying ML/AI models, statistical modeling, and AI research with 2+ year experience as data scientist in some industries and another 1 year as an AI researcher. I co-led a team that developed and tested deep learning detection and tracking models for analyzing the safety of heavy vehicles, achieving high accuracy and automation. I hold a bachelor's degree in statistics from Universitas Indonesia and several certifications. Currently, I am working as an AI researcher at Vision Language Intelligence in Sejong University. The research topic is related to computer vision, natural language processing, and the intersection between machine learning and computer security. My personal website where I am actively writing several blogs and presentation slides related to many topics in AI is https://ravialdy.github.io/.

EDUCATION

UNIVERSITAS INDONESIA   Sep 2018 - June 2022
Best university in Indonesia #QS World University and Times Higher Education (THE) 2024 Rankings
Statistics, Year 2018. Final GPA 3.52/4.00 (Top 10%, Cumlaude)
Relevant Coursework : Data Mining, Probability and Statistics, Regression Analysis, etc.

BANGKIT ACADEMY LED BY GOOGLE, GOJEK, TOKOPEDIA, AND TRAVELOKA
- Machine Learning Path. Grade "A" 93.88/100   Jan 2021 - June 2021
- Certified Google Tensorflow Developer
- Relevant tools : Python, Tensorflow, OpenCV, Tesseract, Javascript.

RELATED EXPERIENCE

SEJONG UNIVERSITY   Seoul, South Korea
AI Researcher at Vision-Language Intelligence   Jan 2023 - Present
- Reproduced several machine learning papers (some of them are listed in this CV), such as video captioning, video question-answering, object detection, parameter-efficient transfer learning, adversarial attacks, and efficient adversarial defense methods.
- Created presentation slides for various machine learning architectures and topics (e.g., Transformer, RNN, LSTM, Policy Gradient Methods in Reinforcement-Learning (RL), Large Language Model (LLM), Vision-Language Pretraining (VLP), Black-Box Adversarial Attacks and Defenses, and Natural Physical Attacks and Defenses).
- Created PyTorch codes for CNN-based approach on designing hybrid beamformers in millimeter-wave (mmWave) Multiple Input Multiple Output (MIMO) systems to fulfill Korean Government projects.
- Relevant tools : Python, JavaScript, MATLAB, PyTorch, Tensorflow, JAX, Flax, Tensorboard, Weights and Biases, and Docker.

PT BERAU COAL   Berau, East Kalimantan
Data Scientist   Aug 2021 - April 2023
- Successfully increased accuracy of no face warning from ~ 12 % to ~ 90 % by using object detection and behavior analysis algorithms with some additional features using OpenCV library.

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- Created the object tracking model added with advanced deviation detections to mitigate the risk happened in the mining site area.
- Created an automation system that makes possible from processing the input in form of excel to the output of a new excel file with the result of our model's detections.
- Helped the data engineers to deploy the created models in the company's server.
- Lead the team to prepare the training process that is needed.
- Testing the model and making sure that it can run appropriately.
- Created visualizations and reports to supervisors and key users based on the result of the created model's detections.
- Relevant tools : Python, SQL, R, Tensorflow, Tesseract, Darknet, and LabelImg.

PT NIAGA BERDIKARI
Data Scientist Intern   June 2021 - August 2021
- Found several insightful insights based on the provided data using Python, Tableau, and SAP Data Analytics.
- Created a dashboard contained with several meaningful insights.
- Created a report to key stakeholders and mentors.

DEPARTMENT OF MATHEMATICS, UNIVERSITAS INDONESIA   Depok, West Java
Laboratory Assistant   Sep 2020 - Sep 2021
- Providing all technical assistance on how to use R, Excel, and Python to statistics students in Universitas Indonesia.
- Creating the module and guideline so the students can learn R, Excel, and Python easily.
- Creating assignments and quizzes to assess what students have learned regarding the material that is given.

NOTABLE PROJECTS

ZOSignSGD Black-Box Adversarial Attacks written in PyTorch
- Link github : https://github.com/ravialdy/ZOSignSGD-PyTorch
- First attempt to reproduce the ZoSignSGD black-box adversarial attack published in ICLR 2019 (https://openreview.net/pdf?id=BJe-DsC5Fm) that is written purely in PyTorch and strictly follows statements described in the paper.
- Supports Multi-GPU training by using PyTorch's Distributed Data Parallel (DDP).

Ravialdy's Personal Website
- Link website : https://ravialdy.github.io/
- Created several blogs and presentation slides related to Computer Vision (CV), Natural Language Processing (NLP), Reinforcement Learning (RL), Deep Learning frameworks, and Adversarial Attacks & Defense methods.

PETL Black-Box Adversarial Attacks
- Link github : https://github.com/ravialdy/PETL-Attacks
- Unified the DASSL (framework for most Parameter-Efficient Transfer Learning (PETL) models) with efficient, modified existing black-box attacks, all implemented in PyTorch.

HONORS - AWARDS

- Finalist of National Data Mining Competition of Jogja Information And Technology Session 2021 held by HIMAKOM Gadjah Mada University.
- 1st Winner of English Debate Competition at Pekan Prestatif 2018 by BEM FMIPA UI.

SKILLS & INTERESTS

Technical   : Python, Matlab, Javascript, Tensorflow, PyTorch, JAX, Multi-GPU Training, Darknet, OpenCV, Tesseract, SQL, Scikit-Learn, R, Tensorboard, Weights and Biases, and Docker.

Interests   : Machine Learning, Computer Vision, Natural Language Processing, Data Analysis & Analytics, Data Visualization, AI model deployments, and Project Management.