

STEVE ANDREAS IMMANUEL

☎ +8210 9985 1378 | ✉ me@steveimm.id | 📄 steve-imm | 🌐 SteveImmanuel | 🌐 steveimm.id | 📍 Seoul, South Korea

EXPERIENCES

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|---|--------------------------------|----------------------------|
| AI Engineer | TelePIX | <i>Feb 2024 - Current</i> |
| <ul style="list-style-type: none">• Researched and develop novel algorithm for multispectral satellite image compression• Proposed novel methodology for few-shot segmentation in remote sensing domain• Implemented LLM framework with RAG and multi-step reasoning capabilities for in-house chatbot | | |
| AI Researcher | VLI (Sejong University) | <i>Feb 2022 - Feb 2024</i> |
| <ul style="list-style-type: none">• Proposed novel architecture for video question answering task with low computational complexity• Implemented reinforcement learning policy gradient algorithm for novel video captioning model• Developed many machine learning pipelines for various tasks, e.g., video captioning, keypoint detection, object detection, etc. | | |
| Software Engineer (Contract) | Mekari | <i>Nov 2021 - Feb 2022</i> |
| <ul style="list-style-type: none">• Cut down API latency by 50% by refactoring and improving old legacy code• Designed a new public API ecosystem to be consumed by many other third parties• Developed a new security mechanism to perform secure computation for sensitive data in an untrusted environment | | |
| Backend Engineer | SejutaCita | <i>Feb 2021 - Aug 2021</i> |
| <ul style="list-style-type: none">• Developed a payment system for an application that has been used by more than 600k users• Implemented a publish-subscribe system for internal communication in a microservices environment• Refactored and created an end-to-end testing mechanism that is easily maintainable and extensible | | |

PUBLICATIONS

- Woojin Cho*, **Steve Andreas Immanuel***, Junhyuk Heo, Darongsae Kwon, , “Neural Compression for Multispectral Satellite Images,” NeurIPS Workshops, 2024 📄
- Steve Andreas Immanuel** and Hagai Raja Sinulingga, “Learnable Prompt for Few-Shot Semantic Segmentation,” CVPR Workshops, 2024 📄
- Steve Andreas Immanuel** and Cheol Jeong, “Lightweight Recurrent Cross-modal Encoder for Video Question Answering,” Knowledge-Based Systems, 2023 📄
- Vania Velda, **Steve Andreas Immanuel**, Willy Fitra Hendria, and Cheol Jeong, “Improving distinctiveness in video captioning with text-video similarity,” Image and Vision Computing, 2023 📄

EDUCATION

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|---|-----------------------------------|----------------------------|
| Master of Intelligent Mechatronics | Sejong University | <i>Mar 2022 - Feb 2024</i> |
| <ul style="list-style-type: none">• Current GPA: 4.50 / 4.50• Main research topics: vision-language understanding, NeRF, computer vision• Curated and taught materials for artificial intelligence and machine learning course for undergraduate students | | |
| Bachelor of Computer Science | Institut Teknologi Bandung | <i>Aug 2017 - Jul 2021</i> |
| <ul style="list-style-type: none">• GPA: 3.96 / 4.00• Earned “Mahasiswa Prestasi” outstanding award for having perfect GPA during the freshman year• Taught the programming course for first-year students | | |

SELECTED PROJECTS

- QuickTorch** 📄
- PyTorch framework for quick development for general machine learning, complete with distributed training support
 - Tech Stack: **PyTorch**, **Optuna**
- Torch Cosine Annealing** 📄
- Python library that implements cosine annealing scheduler introduced in SGDR paper with additional features
 - Tech Stack: **PyTorch**
- TrackMe** 📄
- Integrated LINE chatbot and mobile app to track user location autonomously and provide notifications via chat
 - Tech Stack: **Flutter**, **MongoDB**, **InfluxDB**, **Redis**

AWARDS

1st Winner of AI4EO Map Your City Challenge (2024) 🏆

- Building multimodal classifier to identify building age from top-view satellite imagery

4th Winner of OpenEarthMap Land Cover Mapping Few-Shot Challenge (2024) 🏆

- Developing segmentation model and algorithm for few-shot settings

SKILLS

Programming: Python, Javascript, Java, C++, C#, C, PHP, SQL, NoSQL

Technologies: Torch, Tensorflow, NodeJS, Unity, Docker, Flutter, Firebase, AWS, GCP, Azure, Qt, CI-CD, and many more

Languages: Indonesian (Native), English (Expert), Korean (Beginner)