



# TRUNG VAN

## PERSONAL INFO

Email: vanhuuthanhtrung@gmail.com  
Tel: +358413134992  
Linkedin: linkedin/in/trung-van  
Language: EN | VN

## REFEREES

- Prof Tuomas Virtanen - tuomas.virtanen@tuni.fi
- Prof Jose Lastra - jose.martinezlastra@tuni.fi
- Prof Rinne Mikael - mikael.rinne@aalto.fi
- Dr.Sc Tech Juhani Henttonen -juhani.henttonen@hamk.fi

"That he not busy being born is busy dying" - Bob Dylan

For me, the learning journeys on novel topics are always exciting; at their junctions, other interesting paths begin. People can refer to me by different titles, but I will remind myself to be a learner. I may start learning from my curiosity, but my knowledge will be used for impactful work.

## Fields of knowledge

- Streaming and Event-based system | Cloud Native Solutions
- AI/ML application | Signal Processing | Computer Vision
- Industrial IoT | 5G | Computer Networking | Information Modeling

## EDUCATION

**Summer 2021**

**University of Helsinki**

Open University

- Full-stack Web Development
- DevOps with Docker

**September 2020 - September 2022**

**Tampere Universities (TAU)**

Master Degree of Industry Informatics | **GPA: 4.15/5.0**

Current status: 187/120 credits -

Focus in:

- IoT / Industrial IoT
- AI/ML | Signal Processing
- Industrial Communication | Robotics

**January 2019**

**University of Applied Science Nancy-Brabois**

Cross-university project - Intensive Term

Participate in the "Saving local species" project by building

"Environment parameter tracking totems using Xbee module."

**September 2018- December 2018**

**Seoul National University of Science and Tech**

Exchange student in IT faculty | **GPA: 91/ 100**

Focus:

- Multimedia, Control engineering
- Data processing

Certificate: rank 32th Seoul Asia Regional Round ACM-ICPC

**September 2015 - September 2019**

**Häme University of Applied Sciences (HAMK)**

Bachelor Degree of Automation-Electrical Engineering

**GPA: 3.8/ 5.0**

Focus:

- Industrial Automation & Electrical
- IIoT | Signal processing
- Embedded system | PLC

## TECH STACK

- **Programming:**
  - C/C++ | Scala | Bash
  - Golang
  - Python | Matlab | R
  - JavaScript/Typescript
- **Database:** SQL | MongoDB | influx DB
- **Cloud w/ fundamental knowledge**
  - **AWS:** S3 | IoTCore | Lambda | DynamoDB
  - **Azure:** Basic training | ML Lab
- **AI/ML:** sklearn, keras, pytorch, tensorflow
- **DevOps:**
  - Docker | Kubernetes
  - Heroku | VM | multipass
- **Monitoring:** Prometheus
- **Documentation:** Latex | MermaidJS | PlantUML
- **Web:**
  - Nodejs | Express | React + Redux
  - MaterialUI | Semantic UI React
  - Swagger | OpenAPI
- **Testing:**
  - Jest | Cypress | Supertest | Testing library
  - GitHub Actions | TDD
- **Connectivity:**
  - REST | GraphQL
  - RTP/RTCP | WebRTC
  - HTTP | TCP | UDP | MQTT | DTLS | OSCORE
  - RFID | BLE | Zigbee | XBee | LoRa | NB-IoT
  - Profibus | EtherCAT | CAN | CANopen
- **GUI:** Qt | Thingspeak | Thingsboard
- **Visualization:** D3js | Plotly | Grafana
- **Electrical skills:** design | safety | installation
- **Tools:**
  - Make | Git | SSH | Vim | Qt Creator
  - Postman | Visual Studio
  - Matlab | LabView | Codesys | Fusion | Prosys
- **Automation | Embedded:**
  - PLC | SCADA | HMI | MES | Applied Robotics
  - OPC UA | FIWARE | JADE | ROS
  - Process planning | Distributed Intelligence
  - Microcontrollers | Microprocessor

## EXPERIENCE

### **Research Trainee 04/2022-11/2022**

IoT Research Team @ Finland Ericsson

- IoT Streaming research | one patent submitted
- Scientific documentation and presentation
- Signaling & Data Transferring System prototyping

### **Research Assistant 01/2022-3/2022**

Audio Lab Tampere Universities

- Preliminary tasks for the audio source localization project
- Data collection and labeling
- Scientific experiment design

### **Research Assistant 02/2021-12/2021**

Available @ <http://www.charm-ecsel.eu>

CHARM Project, Tampere University, Finland

- Apply and test the performance of the IoT framework for industrial cases:
  - **Sandvik**-Telemetry monitoring for the mining environment
  - **Valmet**-Paper roll machine condition monitoring
- Data management solution investigation and deployment

### **IoT Developer - Research Assistant 03/2020-12/2020**

Available @ <https://www.rockmonitoring.com/>

REMOS TUTLI Project, Aalto University, Espoo, Finland (Research commercialization project)

- Designed a bright bolt to gather, process, and report stress data applied for deep mines in soft real-time.
- Deployed a time-series system for storage, processing, visualization, and evaluate strain data.
- Deploy and test performance for 20 devices in a network with Zigbee as the communication protocol in constraint conditions.
- Key learning: applied machine learning, software development, system design, networking, electronic design, innovation, and business development

### **IoT Developer - Thesis work 03/2019-09/2019**

Tentrio Company, Oulu, Finland | **Grade: 4/5**

- Investigated, designed, and implemented a device to measure and visualize an animal's heart rate on web-app
- Result: A small system to measure big animal heart-rate including
  - portable custom stethoscope + filter circuit
  - the aggregate and pre-processing device from Arduino
  - web app to visualize ECG of animals with low latency and D3 plotting GUI
- Key learning: Signal processing, web, visualization, circuit design

### **Automation Engineer 05/2018-09/2018**

Danang Heineken Brewery Factory, Vietnam

- Maintenance-trouble shooting Can & Bottle Automation Lines
- Responsible for Analyze-review process automation including PLC | HMI programs | test software-hardware.

## PROJECTS

**Github:** <https://git.io/JIGIB>

### **AI/ML application**

### **Software Development**

- **Kaggle:** competition audio detection
  - Link <https://www.kaggle.com/c/bird-audio-detection>
  - ~5000 records with/ without bird sounds
  - investigate and reshape data: pandas | plotly
  - applying Mel-bands, FFT points, overlap, and TensorFlow to train a model with a score of 0.708
- **Python- AI/ML:**
  - Acoustic predictive maintenance with triplet network
  - Audio signal alignment
  - Audio anomaly detection using embeddings
  - Signal sources separation
  - Multiple projects works applying:
    - Yolo/SSD
    - image/audio classification
    - Linear regression
  - predictive propeller maintenance:
    - analyze propeller model from Fusion
    - predict downtime using Linear Regression
- **MATLAB:**
  - EEG and ECG signal processing
  - Digital scale for continuous measurement
  - Real-time strain monitoring from displacement
  - Multiple signal and image processing applications
- **Golang:**
  - RTP client-server prototype
  - pub-sub micro-services implementation
- **Fullstack:** bloglist fullstack app
  - Frontend: React | Material UI
  - Backend: MongoDB | Nodejs | Express
  - Testing: Cypress | Jest
  - Deploy: Docker | Heroku
- **Backend:** library app
  - GraphQL (Apollo Client and Server) | Express
- **Python-AWS:** auto backup folder
  - using S3 | python | Lambda
  - create an automated process to save CSV files with any change in a specific folder
- **MQTT broker:** deployment is done with Raspberry Pi
- **C++:** Interactive card game
  - OOP | inheritance | data structure
  - C++ techniques | Qt GUI
- **Self-motivated learning:**
  - **Stream processing - Apache Flink | Flume**
  - **IT Center for Science - CSC training:**
    - Intel Parallelism Architect
    - Supercomputing
  - **Azure ML lab:** Image classification with Azure pipe