TOMÁŠ ROUN

I'm a software engineer with a Master's degree in Computer Science & AI. I'm interested in robotics, autonomous driving, computer vision and open-source.

CONTACT

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tomasr8

tomasr.dev

LANGUAGES

Czech	Native
English	Fluent
Italian	Working proficiency
French	Beginner

SKILLS

- **JavaScript/React** 5+ yrs
- **Python** 4+ yrs
- **NodeJS** 4+ yrs
- **AI & Robotics** 3+ yrs
- **Databases** 3+ yrs
- **Git & Gitlab & Github** 5+ yrs
- **Docker & CI/CD** 3+ yrs
- **Technical writing** 3+ yrs

WORK EXPERIENCE

Software Engineer — 2021 - ongoing
CERN
Currently working on Indico, an open-source event management tool made at CERN. Indico is not just the go-to event management tool at CERN but also at more than 250 institutes around the globe including the United Nations, Fermilab and many more. I am responsible for design, development, documentation & user support.

Tech: Python/Flask, JS/React, Postgres, Docker

Technical Student — 2020 - 2021
CERN
Worked on the CERN AppStore - a modern multi-platform system to distribute applications from a centrally managed store. Responsible for gathering requirements, design & development.

Tech: NodeJS/Electron/Express/React, Python, Postgres

Research Intern — 2019 - 2020
Smart Urban Mobility
Developed new state-of-the-art algorithms for Mobility on Demand. The main area of focus was combining statistics and discrete optimization techniques to increase the reliability of Vehicle-sharing Systems such as bike-sharing. I co-authored a paper with our results.

Tech: Python/Numpy/Scipy, Linear programming

Research Intern — 2019 - 2020
Czech Institute of Informatics
Research ways of applying machine learning algorithms to speed up NP-Hard combinatorial optimization problems in the field of optimal job scheduling.

Tech: Python/Tensorflow/scikit-learn, Linear programming

EDUCATION

Master's Degree in Computer Science & AI — 2018 - 2021
Czech Technical University in Prague
Graduated with distinction. In my diploma thesis, I implemented an algorithm for autonomous navigation of a self-driving car for the Formula Student Driverless competition in which I competed with a team from my university.

Bacherlor's Degree in Computer Science — 2015 - 2018
Czech Technical University in Prague
Graduated with distinction.

HACKATHONS

Porsche Engineering Hackathon
3rd place
Programmed a self-driving RC car to stay within a given path, recognise road signs and safely stop in front of obstacles.

Valeo Hackathon
2nd place
Created a program for automatic 3D scene reconstruction and rendering of objects from LiDAR scans.

eForce Hackathon
Organizer
Preparation of a LiDAR-based assignment, evaluation & mentoring participants throughout the hackathon

VOLUNTEERING

Formula Student Team Member — 2019 - 2022
eForce Driverless
Worked on a development of a self-driving racing car for the Formula Student competition. My main work included autonomous navigation (SLAM), computer vision, software development and system design to ensure real-time capabilities. I also prepared technical design documents and reports to be presented to judges during the competition, organized events and hackathons and written articles published on our team website.

Tech: Stereo cameras, LiDAR & GPS sensors, Python/OpenCV/Tensorflow, GPU programming, Robot Operating System

Lecturer — 2019
Czech Technical University in Prague
Taught Introduction to programming using Python at a week-long intensive course aimed at first-year university students. I was responsible for course planning, lectures and practical labs.

PUBLICATIONS

Rebalancing in Vehicle-sharing Systems with Service Availability Guarantees — 2020
Conference Paper, American Control Conference
This paper presents a novel stochastic method for guaranteeing vehicle availability in Vehicle-sharing Systems. The paper was a result of my internship at Smart Urban Mobility. The described algorithm significantly outperforms current state-of-the-art techniques.

HOBBIES

I like to tinker with things - electronics, Arduinos, 3D printing. I have made lots small 3D printed gadgets of my own design including a two-wheeled RC robot. You can see some of the projects I've done on my website. When I'm not programming, I'm most likely to be climbing, reading, cooking or building yet another mechanical keyboard.