

Karel Šmejkal

Curriculum Vitae

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Master's student of Computer Science at Technische Universität Berlin, Data scientist specialising in machine learning. I have acquired a wealth of theoretical and practical expertise from working in a real-estate startup and through my Master's candidature in computer science at Technische Universität Berlin. I am especially interested in autonomous driving, deep learning implementation and research applications of state of the art computer vision systems. I am passionate about building intelligent, autonomous systems and new technologies to improve outcomes for future generations.

Experience

- 10/2018- BEEKIN **Working Student - Data Scientist, Berlin, Germany**
- 04/2020
- Build models (Random Forest, Ensemble) to classify risk of late payments of borrowers
 - Time Series Analysis to predict (Linear Regression) and analyse monthly rent in cities in the USA
 - Analysis and optimal pricing of meeting rooms
 - Use of AWS lambda and machine learning techniques to automate and clean data as well as analysis of large datasets
 - NLP crime types categorisation
- Technologies used: Python, PySpark, AWS, ML frameworks, SQL**
- 08/2017- SPOTCAP GLOBAL SERVICES GMBH **Working Student - System Admin, Berlin, Germany**
- 09/2018
- Maintenance of local network infrastructure
 - Setting up relational and non-relational databases
 - Assisting in deploying services on Linux-based servers (AWS, local servers)
 - Automating simple scripts (python, shell)
 - Diagnosing and resolving technical hardware and software issues
- Technologies used: Shell, Python, AWS, SQL, NoSQL**

Volunteer Experience

- 10/2019- SMALL-SCALE AUTONOMOUS RACING CAR
- 02/2020
- Development of an small-scale autonomous racing car in a group of 4. The goal was to develop autonomous racing car which could race on previously unknown track. Developed in **Python and C++ using ROS middleware**. Short demo: [LINK](#). Technical paper: [LINK](#)
- 06/2018 TECHCRUNCH HACKATON 24 Hours Hackaton held in Paris
- Development of an app to automate process of car rental for a company GEFECO in the team of 5 people. The goal was to use cameras during the return of a car to automate cleaning and detection of small scratches on the car's surface. The app was developed for android and the model in **Python (TensorFlow)**.
- 08/2017 CANSAT: SATELLITE DESIGN Design of a small scale satellite, rocket and their launch sequence
- Development of water-driven rocket and small scale satellite performing basic measurements with an Arduino. Covered introduction to astronautics, CAD design and mission design. The controlling software was coded in **C++**. Launch video link - [LINK](#)
- 06/2017 OCEAN GAME JAM BERLIN Two-day event held in Berlin with the purpose of creating a game about the scientific issues.
- Development of the the game FISH in a team of five members using **Java** and **libGdx** framework. Creating a fun, playable game that generated warnings for rising sea levels and overfishing with a team of five members.

- 03-06/2015 **MEDIA ART LAB MERCOSUL** An international artistic project for the Goethe Institute in Porto Alegre (Brazil) led by German artist PEGGY SYSLOPP. Developed in **shell, Python and C**.
- Programming of interactive media-installation with 6 CRT monitors and one Raspberry.
 - Dynamic testing of interactive media-installation with two Raspberry Pi and one Pi2Go.
 - The robot Pi2Go with a camera follows a fictive borderline in the form of an heart and streams the video to a Raspberry.

Education

- 2017– present **Master's Degree**, Computer Science, Cognitive Systems
Faculty IV: Electrical Engineering and Computer Science,
Technische Universität Berlin, GERMANY
- 2012–2016 **Bachelor's Degree**, Information System and Management
Faculty of Information Technology,
Czech Technical University in Prague, CZECH REPUBLIC
- Awardee of grant for outstanding performance in summer semester 2015 and winter semester 2015/2016
- 8/2014–8/2015 **Study abroad**, Institute of Informatics, UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL, BRAZIL

Certificates

- 10/2020 **Deep Learning Specialization**, Coursera
- 10/2020 **DeepLearning.AI TensorFlow Developer Specialization**, Coursera

Computer Skills

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|------------------------------|--|------------------------------------|---|
| Programming Languages | - Python, C++, Java, SQL, Shell Scripting | Machine Learning Frameworks | - Scikit-learn, PyTorch, fast.ai, TensorFlow, Keras |
| Libraries/Frameworks | - OpenCV, Pandas, NumPy, Apache Spark, ROS | Technologies | - AWS, GCP, Docker, Git |

Languages

- | | |
|----------------------|--------------|
| English | Fluent |
| Czech | Native |
| Brazilian Portuguese | Intermediate |
| German | Beginner |

External Interests

- Travelling Enjoy solo travelling on a budget which enables me to get out of my comfort zone and explore new cultures.
- Photography, Videography Expressing creativity through video editing and short video composition.
- Podcasts, Books Learning new ideas and expanding my knowledge. My favorite podcasts: Lex Fridman Podcast, Joe Rogan Experience. My favorite Books: 12 rules for life by Jordan Peterson, Brief answers to the big questions by Stephen Hawking, Life 3.0 by Max Tegmark
- Drone Flying How I like to spend my free time on the weekends.