

Michal Neoral

☎ +420 22 435 5781 | ✉ neoramic@fel.cvut.cz | 🌐 cmp.felk.cvut.cz/~neoramic

📠 +420 606 865 739 | ✉ michalneoral@email.cz

EDUCATION

- **Czech Technical University in Prague** 2018 – 2025
Ph.D. candidate Prague, Czech Republic
 - Faculty of Electrical Engineering
 - Informatics / Artificial Intelligence and Biocybernetics
 - thesis topic: Dense Motion Estimation in a Monocular Video
- **Czech Technical University in Prague** 2014 – 2017
Master's degree in engineering – Ing. (MSc equivalent) Prague, Czech Republic
 - Faculty of Electrical Engineering
 - Open Informatics
 - specialization: Computer Vision and Image Processing
- **Czech Technical University in Prague** 2011 – 2014
Bachelor's degree in engineering – Bc. (BSc equivalent) Prague, Czech Republic
 - Faculty of Electrical Engineering
 - Cybernetics and Robotics
 - specialization: Robotics

TEACHING

- **Pattern Recognition and Machine Learning** 2018 – 2025
Czech Technical University in Prague
 - teaching
 - material preparation
 - development of automatic evaluation of student homeworks
- **Digital Photography Processing** 2020 – 2022
Czech Technical University in Prague
- **Computer Vision Methods** 2018 – 2019
Czech Technical University in Prague

PATENTS AND PUBLICATIONS

C=CONFERENCE PAPER, P=PATENT, S=IN SUBMISSION, T=THESIS

- [C] Jonáš Šerých, **Michal Neoral**, and Jiří Matas. (2025). **MFTIQ: Multi-Flow Tracker with Independent Matching Quality Estimation**. In *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision*, February 2025, Tuscon, Arizona USA. Accepted.
- [C] **Michal Neoral**, Jonáš Šerých, and Jiří Matas. (2024). **MFT: Long-term Tracking of Every Pixel**. In *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision*, pp. 6837–6847, January 2024, Waikoloa, Hawaii USA.
- [C] **Michal Neoral**, Jan Šochman, and Jiří Matas. (2021). **Monocular Arbitrary Moving Object Discovery and Segmentation**. In *The 32nd British Machine Vision Conference*. In *The 32nd British Machine Vision Conference*, November 2021, Online.
- [C] **Michal Neoral**, Jan Šochman, and Jiří Matas. (2019). **Continual Occlusion and Optical Flow Estimation**. *Computer Vision – ACCV 2018*. Ed. by C.V. Jawahar et al. Cham: Springer International Publishing, 2019, pp. 159–174. ISBN: 978-3-030-20870-7.
- [C] **Michal Neoral** and Jan Šochman. (2017). **Object Scene Flow with Temporal Consistency**. In *22nd Computer Vision Winter Workshop (CVWW)* Pattern Recognition and Image Processing Group; TU Wien & PRIP Club; Vienna; Austria, February 2017, ISBN: 978-3-200-04969-7.
- [P] Nikolay Chumerin, **Michal Neoral**, Jan Šochman, and Jiří Matas (2023). **MONOCULAR-VISION-BASED DETECTION OF MOVING OBJECTS**. EP Patent EP4174770B1, filed Oct 28, 2021, and issued Nov 29, 2023. **Granted Patent**

- [P] Nikolay Chumerin, Jonáš Šerých, **Michal Neoral**, and Jiří Matas. (2024). **A METHOD AND SYSTEM FOR TRACKING A PIXEL IN A VIDEO**. EP Patent EP4465239A1, filed May 16, 2023, and issued Nov 20, 2024. **Patent Application**
- [P] Nikolay Chumerin, **Michal Neoral**, Jan Šochman, and Jiří Matas. (2023). **MONOCULAR-VISION-BASED DETECTION OF MOVING OBJECTS**. EP Patent EP4174770A1, filed Oct 28, 2021, and issued May 03, 2023. **Patent Application**
- [P] Jan Šochman, Nikolay Chumerin, Jiří Matas, and **Michal Neoral**. (2020). **METHODS FOR OPTICAL FLOW ESTIMATION**. WO Patent WO2020088766A1, filed Oct 31, 2018, and issued May 07, 2020. **Patent Application**
- [T] **Michal Neoral** (supervisor Mgr. Jan Šochman, Ph.D.) (2017). **Object Scene Flow in Video Sequences**. **Master Thesis**, awarded with the Dean's Prize for outstanding master thesis.
- [T] **Michal Neoral** (supervisor Ing. Pavel Krsek, Ph.D.) (2014). **Extraction of Features from Moving Garment**. **Bachelor Thesis**.

PROJECTS AND INTERNSHIPS

- **Toyota Motor Europe (TME), Brussels, Belgium.** *February 2017 – June 2017*
Internship
 - Tools: C++, CUDA, Python, CAFFE2, TensorFlow
 - Developed and implementation of monocular depth estimation
- **Project: computer vision research for Toyota Motor Europe** 2016 – 2024
The Toyota Research Lab at the Faculty of Electrical Engineering
- **Project: SyRoTek – Systém pro Robotickou Tele-výuku** 2015 – 2016
A Robotic System for Education
- **Project: CloPeMa – Clothes Perception and Manipulation** 2013 – 2015