

# Tomáš Vojř

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Birthday: 29. 10. 1985  
Address: Prague, Czech Republic  
E-mail: vojir.tomas@gmail.com  
Git: <https://github.com/vojirt>

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**Education:** 2010 – 2017 **CTU Prague – Faculty of Electrical Engineering**

*Ph.D. study: Branch of Artificial Intelligence and Biocybernetics*

- Ph.D. Theses Topic: Short-Term Visual Object Tracking in Real-Time
  - Advisor: Prof. Jiří Matas
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2008 – 2010 **CTU Prague – Faculty of Electrical Engineering**

*Master's degree: Computer Science and Engineering – System programming*

- Thesis: Demo application for Tracking-Modeling-Detection
    - Implementation of C++ library and UI for online tracking algorithm TLD (Tracking-Learning-Detection)
    - Improvement in model learning by proposing boosting approach
  - Thesis supervisor: Ing. Zdeněk Kálal Ph.D.
  - Graduated with honors
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2005 – 2008 **CTU Prague – Faculty of Electrical Engineering**

*Bachelor degree: Branch of Computer Science and Engineering*

- Thesis: XML Documents in Relational Database
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**Professional experience:**

April 2018 – April 2020 **Cambridge University**

*Research Associate*

- Visual semantic self-localization for autonomous navigation tasks
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July 2010 – December 2016 **Toyota Motor Corporation**

*Junior Researcher*

- Real time detection and tracking of cars in video stream from camera mounted in vehicle, project run at CTU Prague
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September 2011 – December 2011 **National Institute of Informatics in Tokyo, Japan**

*Visiting Researcher*

- Real time object tracking using different tracking modalities
  - Internship program, hosting professor Akihiro Sugimoto
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2013 – present **<http://www.votchallenge.net/>**

- Co-founder and member of technical committee of VOT Challenge
  - Developing and implementing methodology for single-target visual object tracking evaluation
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**Licensing of developed algorithms and hands-on training**

- Toyota (Europe, Japan), Samsung (Poland, Korea)
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**Programming skills:**

- Advanced/Expert: C++ (including OpenCV library), Python, Matlab
- Basic: Java, Unix scripting, SQL, PHP/CSS/HTML, Assembler

**Languages:** Czech – Native language; English – Advanced knowledge; Russian – Basic understanding

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**Others:** GNU/Linux administration, LaTeX typesetting system, UML, git version system, Driving license- category B

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**Publications:**

- Ignas Budvytis, Marvin Teichmann, Tomáš Vojíř, Roberto Cipolla “*Large scale joint semantic re-localisation and scene understanding via globally unique instance coordinate regression*”, British Machine Vision Conference, 2019
- Alan Lukežič, Luka Čehovin Zajc, Tomáš Vojíř, Jiří Matas, Matej Kristan, “*Performance Evaluation Methodology for Long-Term Visual Object Tracking*”, 2019, arXiv preprint arXiv:1906.08675
- Alan Lukežič, Luka Čehovin Zajc, Tomáš Vojíř, Jiří Matas, Matej Kristan, “*FuCoLoT—a fully-correlational long-term tracker*”, Asian Conference on Computer Vision, 2018
- Tomáš Vojíř, “*Short-Term Visual Object Tracking in Real-Time*”, PhD. Thesis, 2017, adviser Jiří Matas
- Alan Lukežič, Tomáš Vojíř, Luka Čehovin Zajc, Jiří Matas and Matej Kristan “*Discriminative Correlation Filter with Channel and Spatial Reliability*”. Computer Vision and Pattern Recognition (CVPR) 2017.
- Tomas Vojir, Jiri Matas, and Jana Noskova “*Online Adaptive Hidden Markov Model for Multi-Tracker Fusion*”. Computer Vision and Image Understanding 2016.
- Matej Kristan, Jiri Matas, Aleš Leonardis, Tomas Vojir, Roman Pflugfelder, Gustavo Fernandez, Georg Nebehay, Fatih Porikli, and Luka Čehovin, “*A Novel Performance Evaluation Methodology for Single-Target Trackers*”. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2016.
- Tomas Vojir, Jana Noskova and Jiri Matas, “*Robust scale-adaptive mean-shift for tracking*”. Pattern Recognition Letters 2014.
- Tomas Vojir and Jiri Matas, “*The Enhanced Flock of Trackers*”. Registration and Recognition in Images and Videos - Studies in Computational Intelligence, Springer 2014.
- Tomas Vojir, Jana Noskova and Jiri Matas, “*Robust Scale-adaptive Mean-Shift for Tracking*”. Scandinavian Conferences on Image Analysis (SCIA), 2013. **best paper award**
- Claudio Caraffi, Tomas Vojir, Jura Trefny, Jan Sochman and Jiri Matas, “*A System for Real-time Detection and Tracking of Vehicles from a Single Car-mounted Camera*”. Intelligent Transportation Systems Conference, 2012.
- Tomas Vojir and Jiri Matas, “*Robustifying the Flock of Trackers*”. Computer Vision Winter Workshop, 2011.

**Visual Object Tracking Challenge Publications:**

- Matej Kristan, Ales Leonardis, Jiri Matas, Michael Felsberg, Roman Pflugfelder, Luka Čehovin Zajc, Tomáš Vojíř et al., “*The sixth visual object tracking vot2018 challenge results*”, European Conference on Computer Vision 2018
- Matej Kristan, Ales Leonardis, Jiri Matas, Michael Felsberg, Roman Pflugfelder, Luka Cehovin Zajc, Tomas Vojir, Gustav Hager, Alan Lukezic, Abdelrahman Eldesokey, Gustavo Fernandez, “*The Visual Object Tracking VOT2017 Challenge Results*”, The IEEE International Conference on Computer Vision (ICCV), 2017, pp. 1949-1972
- Matej Kristan, Ales Leonardis, Jiri Matas, Michael Felsberg, Roman Pflugfelder, Luka Cehovin, Tomas Vojir, Gustav Hager, Alan Lukezic, Gustavo Fernandez et al. “*The Visual Object Tracking VOT2016 Challenge Results*”, In: Hua G., Jégou H. (eds) Computer Vision – ECCV 2016 Workshops. ECCV 2016. Lecture Notes in Computer Science, vol 9914. Springer, Cham
- Michael Felsberg, Matej Kristan, Jiri Matas, Ales Leonardis, Roman Pflugfelder, Gustav Hager, Amanda Berg, Abdelrahman Eldesokey, Jorgen Ahlberg, Luka Cehovin, Tomas Vojir, Alan Lukezic, Gustavo Fernandez et al. “*The Thermal Infrared Visual Object Tracking VOT-TIR2016 Challenge Results*”, In: Hua

G., Jégou H. (eds) Computer Vision – ECCV 2016 Workshops. ECCV 2016. Lecture Notes in Computer Science, vol 9914. Springer, Cham

- Michael Felsberg, Amanda Berg, Gustav Hager, Jorgen Ahlberg, Matej Kristan, Jiri Matas, Ales Leonardis, Luka Cehovin, Gustavo Fernandez, Tomas Vojir, Georg Nebehay, Roman Pflugfelder “*The Thermal Infrared Visual Object Tracking VOT-TIR2015 Challenge Results*”, The IEEE International Conference on Computer Vision (ICCV) Workshops, 2015, pp. 76-88
- Matej Kristan, Jiri Matas, Ales Leonardis, Michael Felsberg, Luka Cehovin, Gustavo Fernandez, Tomas Vojir, Gustav Hager, Georg Nebehay, Roman Pflugfelder “*The Visual Object Tracking VOT2015 Challenge Results*”, The IEEE International Conference on Computer Vision (ICCV) Workshops, 2015, pp. 1-23
- Matej Kristan, Roman Pflugfelder, Aleš Leonardis, Jiri Matas, Luka Čehovin, Georg Nebehay, Tomas Vojir, and Gustavo Fernandez et al. “*The Visual Object Tracking VOT2014 challenge results*”. Visual Object Tracking Workshop 2014 at ECCV2014, 2014
- Matej Kristan, Roman Pflugfelder, Aleš Leonardis, Jiri Matas, Fatih Porikli, Luka Čehovin, Georg Nebehay, Fernandez Gustavo, Tomas Vojir, and et al. “*The Visual Object Tracking VOT2013 challenge results*”. ICCV2013 Workshops, Workshop on visual object tracking challenge, 2013