Ing. Adam Novozámský Ph.D.

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Education

- **TU Wien, Austria** — **postdoc**
  Faculty of Informatics, Computer Vision Lab — *2021 – 2022*
  work web: https://cvl.tuwien.ac.at/staff/adam-novozamsky
- **Czech Technical University in Prague** — **PhD**
  Faculty of Nuclear Science and Physical Engineering, Department of Mathematics — *2010 – 2018*
  Selected Application Areas Of Image Processing: Image Forensics And Medical Imaging
- **Czech Technical University in Prague** — **MSc**
  Faculty of Nuclear Science and Physical Engineering, Department of Physical Electronics — *2008 – 2010*
  Software for tomographic reconstruction of refractive index profile of special optical fiber preforms
- **Czech Technical University in Prague** — **BSc**
  Faculty of Nuclear Science and Physical Engineering, Department of Physical Electronics — *2003 – 2008*
  The Electronic Guard of Physically Handicapped Persons

Work History

- **Institute of Information Theory and Automation, The Czech Academy of Sciences** — **Prague**
  research fellow — *2018 – current*
  Development of image analysis software tools for forensic, industrial and medical applications.
- **Computer Vision Lab, Faculty of Informatics, TU Vienna** — **Vienna**
  project assistant — *2021 – 2022*
  Basic and applied research in computer vision.
- **Institute of Information Theory and Automation, The Czech Academy of Sciences** — **Prague**
  junior research fellow — *2010 – 2018*
  Research on image processing, computer vision, and machine learning.
- **Institute of Photonics and Electronics, The Czech Academy of Sciences** — **Prague**
  junior research fellow — *2009 – 2011*
  Research on optical fiber preforms and software programming

Teaching

- **Machine Learning I.** — **CTU FNSPE**
  leadership exercises — *2021 – current*
  The basics of machine learning methods.
- **Machine Learning II.** — **CTU FNSPE**
  leadership exercises — *2021 – current*
  More advanced machine learning techniques with emphasis on deep networks.
- **Digital image processing in practice** — **CUNI MFF**
  leadership of the course — *2013 – current*
  The seminar aims at digital image processing and pattern recognition.

- **Digital image processing** — **CTU FNSPE**
  leadership exercises — *2010 – current*
  Introductory course in digital image processing and recognition.

Selected Publications

[1] Adam Novozámský, Babak Mahdian, and Stanislav Saic. Imd2020: A large-scale annotated dataset tailored for detecting manipulated images. In *2020 IEEE Winter Applications of Computer Vision Workshops (WACVW)*, pages 71–80, March 2020. doi: https://doi.org/10.1109/WACVW50321.2020.9096940.

[2] Adam Novozámský, Jan Flusser, Ilja Tachecí, Lukáš Sulík, Jan Bureš, and Ondřej Krejcar. Automatic blood detection in capsule endoscopy video. *Journal of Biomedical Optics*, 21(12):1 – 8, 2016. doi: https://doi.org/10.1117/1.JBO.21.12.126007.

[3] Adam Novozámský and Michal Šorel. Detection of copy-move image modification using jpeg compression model. *Forensic Science International*, 283:47–57, 2018. ISSN 0379-0738. doi: https://doi.org/10.1016/j.forsciint.2017.11.031.

[4] Adam Novozámský, Dominik Vít, Filip Šroubek, Jiří Franc, Milan Krbálek, Zuzana Bílkova, and Barbara Zitová. Automated object labeling for cnn-based image segmentation. In *2020 IEEE International Conference on Image Processing (ICIP)*, pages 2036–2040, Oct 2020. doi: https://doi.org/10.1109/ICIP40778.2020.9191320.

Selected Grants

- **Hybrid Neural Network Architectures for Image Recognition** — **CZ-24-10069S**
  responsible for detecting video and image fakes — *2024 – 2026*
  Current convolutional networks work with inefficient pixel-wise image representation, which does not provide almost any invariance. This leads to using very large training sets and massive augmentation.
- **VIGILANT - Vital IntelliGence to Investigate ILlegAl DisiNformaTion** — **EU-101073921**
  responsible for multi-branch hybrid network design and training — *2022 – 2025*
  An interdisciplinary effort by a consortium of leading researchers and experts to help police authorities counter disinformation linked to criminal activities.
- **AISEE - Artificial Intelligence based Search Environment for video/photo** — **CZ-VJ02010029**
  responsible for object/human detection and tracking — *2022 – 2025*
  The project addresses AI data mining in forensic practice.
- **PROVENANCE - PROviding VErificatioN AssistaNCE for New Content** — **EU-825227**
  responsible for analyzing images and detecting fakes — *2018 – 2022*
  The PROVENANCE Social Network Monitor verifies multimedia content by applying advanced tools for multimedia analytics.

Other Activity

- **International Computer Vision Summer School** — **Sicilia, Italy**
  poster presentation — *2012*
  The school is open to about 150 qualified, motivated and pre-selected candidates (500).
- **Summer and Winter School of Image Processing** — **UTIA**
  oral presentations — *2010 – current*
  The Winter and Spring Schools of Image Processing are popular workshops organized by our department.
- **Multikemp - multi sport kemp** — **Athletes in Action**
  main camp leader — *2008 – current*
  Athletes in Action is a non-profit American sports organization founded in 1966. The camp consist of sport training, unique outdoor activities, and games and is open to all students aged 14 to 21. There are over 120 participants and about 30 Czech and US instructors and coaches every year.