Amit Aides, Ph.D.

curriculum vitæ

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Education

2012–2018 **Ph.D.**, *Technion, Israel Institute of Technology*.
- Developed novel inverse algorithms for remote sensing.
- Developed unique large camera networks for remote sensing.

2008–2011 **Master of Science**, *Technion, Israel Institute of Technology*.
- Developed computer vision algorithms for video processing.

GPA: 93.4, Final Examination: 92

1991–1996 **Bachelor of Science**, *Technion, Israel Institute of Technology*.

Study Fields:
- Computers.
- Control systems
- Biological systems and signals.

Academic Project:
- Design of Phase Array antenna controller for the Technion satellite.

GPA: 85.8

PhD thesis

title *Lightfield Analysis and Recovery of the Atmosphere*

supervisors Professor Yoav Y. Schechner

Master thesis

title *Multiscale Ultrawide Video Extrapolation*

supervisors Professor Yoav Y. Schechner

Experience

Vocational

2015–Present **Deeplearning Researcher**, *IBM, Israel*.
- Developed audio-visual algorithms for Multi-Modal Biometrics.
- Developed audio-visual algorithms for video enhancement.
- Developed object detection and recognition algorithms.

2008–2016 **Teaching Assistant**, *Technion, Israel Institute of Technology*.
- Served as team leader and lead developer of the optical payload and image processing system for the Technion's team in the **AUVSI Student UAS Competition** (achieving $\mathbf{2}^{nd}$ and $\mathbf{4}^{th}$ places in **2015** and **2016** respectively).
- Developed and taught the Linux Kernel hands-on course for the OS Laboratory.
- Supervised undergraduate projects in the Vision and Image Sciences Laboratory.
- Served as teaching assistant for the Microprocessors and Logic Design courses.

2007–2010 **Part time SW engineer**, *Sick Sensors Ltd.*

- Designed and developed automatic testing environment for rotary encoders.
- Designed micro-controller's firmware.

2004–2006 **Co-founder**, *DigitalPeers.*

- Co-authored CamTrack, pioneering webcam software.
- Developed robust real-time face tracking algorithm.
- Developed scriptable graphic engine based on python.
- Designed DigitalPeers's Website.

2002–2003 **HW engineer**, *Marvell Israel (M.I.S.I) Ltd.*

- Developed a testing environment in C++ for Chip Verification.

2000–2001 **HW engineer**, *ISD Ltd.*

- Designed chips using VHDL.

1994–1996 **Teaching Assistant**, *Technion, Israel Institute of Technology.*

- Served as instructor in the Energy Conversion Laboratory.

1992–1993 **HW engineer**, *IBM Israel Ltd.*

- Supported a synthesis tool in the VLSI department.

Military service

1996–2000 **Technical Officer**, *Israeli Navy.*

- Supported underwater systems and their test equipment.
- Managed the Electrical Technician school.

Languages

Hebrew (native), English (fluent), Spanish (fluent).

Computer Skills

Python, C++, C, Matlab.

Open Source Projects

Programs I Developed

- **CameraNetwork** - Software for remote sensing camera network.
- **AUVSI-TAS-System** - Payload system developed by the Technion team for the **AUVSI SUAS** 2015-2016 competitions.
- **pycompsense** - Python toolbox for compressed sensing and sparse reconstruction algorithms.
- **pyrwt** - Python wrapper for the *RICE* Wavelet Toolbox.
- **pyoslabgrader** - A package for writing automatic tests for the linux kernel course taught in the Technion.
- **pydirect** - Python wrapper for the *DIRECT* global optimization algorithm.
- **cyipopt** - Python wrapper for the *IPOPT* optimization package.
- **pylibni845x** - Python wrapper for the *NI USB-4851 & SPI* interface.

Programs I Contributed to

- **chainer** - A flexible framework of neural networks for deep learning.
- **scikits-learn** - Easy-to-use and general-purpose machine learning in Python.

Publications

Amit Aides, Tamar Avraham, and Yoav Y. Schechner. Multiscale ultrawide foveated video extrapolation. In *IEEE International Conference on Computational Photography (ICCP)*, Apr 2011.

Amit Aides, Yoav Y. Schechner, Vadim Holodovsky, Michael J. Garay, and Anthony B. Davis. Multi sky-view 3d aerosol distribution recovery. *Opt. Express*, 21(22):25820–25833, Nov 2013.

Dmitry Veikherman, Amit Aides, Yoav Y. Schechner, and Aviad Levis. Clouds in the cloud. In *The 12th Asian Conference on Computer Vision (ACCV)*, Nov 2014.

Aviad Levis, Yoav Y. Schechner, Amit Aides, and Anthony B Davis. Airborne three-dimensional cloud tomography. In *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, 2015.

Aviad Levis, Yoav Y Schechner, Amit Aides, and Anthony B Davis. An efficient approach for optical radiative transfer tomography using the spherical harmonics discrete ordinates method. *arXiv preprint arXiv:1501.06093*, 2015.

Vadim Holodovsky, Yoav Y Schechner, Anat Levin, Aviad Levis, and Amit Aides. In-situ multi-view multi-scattering stochastic tomography. In *IEEE International Conference on Computational Photography (ICCP)*. IEEE, 2016.

Amit Aides and Hagai Aronowitz. Text-dependent audiovisual synchrony detection for spoofing detection in mobile person recognition. In *INTERSPEECH*, Sep 2016.

Ahmad Kiswani, Amit Aides, and Mark Silberstein. Deep learning in aerial systems using jetson. https://devblogs.nvidia.com/parallelforall/deep-learning-in-aerial-systems-jetson/, 2016.

Aviad Levis, Amit Aides, Yoav Y. Schechner, Anthony B. Davis, and Vadim Holodovsky. Inverse-scattering bridging micron to kilometer scales. CVPR workshop on Computational Cameras and Displays, 2017.

Amit Aides, David Dov, and Hagai Aronowitz. Robust audiovisual liveness detection for biometric authentication using deep joint embedding and dynamic time warping. In *2018 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, April in review.