# Itai Lang – Curriculum Vitae

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## Summary

I am a Postdoctoral Researcher at the University of Chicago. I am a passionate researcher who seeks creative solutions to new problems and innovative applications. My research is focused on developing artificial intelligence for geometry processing, spanning the fields of computer vision, computer graphics, and machine learning.

## Education

2017-2023    **Studies for a PhD degree in Electrical Engineering at Tel Aviv University, Israel**

- Research in the areas of Geometry Processing, Computer Vision, and Deep Learning, advised by Professor Shai Avidan.

- GPA: 97.7.

**Publications:**

- **Itai Lang**, Dror Aiger, Forrester Cole, Shai Avidan, and Michael Rubinstein. SCOOP: Self-Supervised Correspondence and Optimization-Based Scene Flow. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.

- Dale Decatur, **Itai Lang**, and Rana Hanocka. 3D Highlighter: Localizing Regions on 3D Shapes via Text Descriptions. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.

- Tomer Stolk*, **Itai Lang***, and Shai Avidan. SAGA: Spectral Adversarial Attack on 3D Meshes. *arXiv preprint arXiv:2211.13775*, 2022. *Equal contribution

- Ofek Pearl, **Itai Lang**, Yuhua Hu, Raymond A. Yeh, and Rana Hanocka. GeoCode: Interpretable Shape Programs. *arXiv preprint arXiv:2212.11715*, 2022.

- **Itai Lang**, Uriel Kotlicki, and Shai Avidan. Geometric Adversarial Attacks and Defenses on 3D Point Clouds. In *Proceedings of the International Conference on 3D Vision (3DV)*, 2021.

- **Itai Lang***, Dvir Ginzburg*, Shai Avidan, and Dan Raviv. DPC: Unsupervised Deep Point Correspondence via Cross and Self Construction. In *Proceedings of the International Conference on 3D Vision (3DV)*, 2021. *Equal contribution

- **Itai Lang**, Asaf Manor, and Shai Avidan. SampleNet: Differentiable Point Cloud Sampling. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020.

- Oren Dovrat*, **Itai Lang**\*, and Shai Avidan. [Learning to Sample](). In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019. \*Equal contribution

2006-2013   **An MSc degree in Electrical Engineering from Tel Aviv University, Israel**

- Research on lesion segmentation in medical images, advised by Dr. Hedva Spitzer and Professor Nahum Kiryati.

- GPA: 92.0.

**Publication:**

**Itai Lang**, Miri Sklair-Levy, and Hedva Spitzer. [Multi-scale texture-based level-set segmentation of breast B-mode images](). *Computers in Biology and Medicine*, 2016.

2001-2005   **A BSc degree in Electrical Engineering and a BA degree in Physics from the Technion, Israel**

- Project topic: statistical analysis of medical images.

- GPA: 91.2 (graduated **Summa Cum Laude**).

**Professional Experience**

2013-2021   **Algorithm Engineer at the Samsung Israeli Research Center**

- Research of hand detection and gesture recognition algorithms for the Dynamic Vision Sensor (DVS); employment of Computer Vision and Machine Learning methods, such as: clustering, tracking, trajectory segmentation, deep learning, convolutional and spiking neural networks.

- Research and development of an anti-flicker algorithm for the DVS, based on a Hidden Markov Model; published a patent application: [Event-Based Sensor that Filters for Flicker](), US 2019/0362256 A1.

- Development of high-dynamic-range image sensors, including: motion deblurring algorithms, hardware architecture design, and simulation of an adaptive exposure sensor.

- Methodology and infrastructure development, including: formulation of research procedures, algorithm development standards and tools for automatic code integration.

- Train junior algorithm engineers and act as a center of knowledge.

**Skills**

Programming   Python, C/C++, Matlab.

Languages   Hebrew – Native speaker, English – Proficient.