Roy Or-El | Curriculum Vitae

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I'm a computer science Ph.D. student working in computer vision. My research is focused on unsupervised image editing and synthesis. Additional topics of interest are 3D scene understanding and 3D reconstruction.

Education

- **University of Washington** — **Seattle, WA, USA**
  Ph.D, Computer Science, Expected graduation: December 2023 — *2016–present*
  Advisor: Prof. Ira Kemelmacher-Shlizerman

- **Technion - Israel Institute of Technology** — **Haifa, Israel**
  M.Sc, Electrical Engineering, cum laude — *2012–2015*
  Advisors: Prof. Alfred M. Bruckstein, Prof. Ron Kimmel
  Thesis: "Enhanced Active Vision" - Research on shading based depth map accuracy enhancement algorithms.

- **Technion - Israel Institute of Technology** — **Haifa, Israel**
  B.Sc, Electrical Engineering — *2006–2010*
  Focused on: Signal Processing, Control theory, Communication
  Final Project: "Autonomous Robot Control with a DSP and Video Camera"

Professional Experience

- **Adobe Inc.** — **Seattle, WA**
  Research intern, Creative Intelligence Lab — *June 2021–September 2021*
  Research on 3D generation & editing.

- **Allen Institute for Artificial Intelligence** — **Seattle, WA**
  Research intern, Perceptual Reasoning and Interaction Research group — *June 2018–September 2018*
  Research on video understanding.

- **Facebook Inc.** — **Seattle, WA**
  Research intern, Computational photography group — *June 2017–September 2017*
  Research on video summarization.

- **Intel corp.** — **Haifa, Israel**
  Research intern, Perceptual computing group — *April 2016–September 2016*
  Research on improving depth resolution for RealSense products.

- **Technion, Israel Istitute of Technology** — **Haifa, Israel**
  Research Assistant, Geometric Image Processing Lab — *2015–2016*
  Designing, and implementing methods for depth map accuracy enhancement. Working with Prof. Ron Kimmel and Prof. Alfred M. Bruckstein.
  Developing algorithm for curvilinear structures segmentation in 3D. Working with Prof. Ron Kimmel and Prof. Adam De La Zerda.

- **GE Healthcare** — **Haifa, Israel**
  Board designer, Ultrasound division — *2010–2011*
  Designing, developing and testing of printed circuit boards for ultrasound systems.

Responsible for all development phases: board design, board layout, bring up and verification.

Teaching Experience

- **University of Washington** — **Seattle, WA**
  CSE455: Computer Vision — *2021*
  Gave weekly tutorials & office hours.
- **Technion, Israel Istitute of Technology** — **Haifa, Israel**
  44191: Control Systems 1, TA in charge — *2013–2014*
  Gave weekly tutorials to ~30 students. Writing and grading HW assignments and exams.
- **Technion, Israel Istitute of Technology** — **Haifa, Israel**
  44193: Linear Control Laboratory. Lab instructor — *2012–2013*
  Weekly on-hand instruction, supervision and grading of ~5 student pairs.

Publications

- **Or-El, R.**, Park, J. J., Kemelmacher-Shlizerman, I., "A Mesh for Every Moment". In submission, 2026.
- **Or-El, R.**, Luo, X., Shan, M., Shechtman, E., Park, J. J., Kemelmacher-Shlizerman, I., "StyleSDF: High-Resolution 3D-Consistent Image and Geometry Generation". 35th IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.
- **Or-El, R.**, Sengupta, S., Fried, O., Shechtman, E., Kemelmacher-Shlizerman, I., "Lifespan Age Transformation Synthesis". European Conference on Computer Vision, 2020.
- Richardson, E., Sela, M., **Or-El, R.**, Kimmel, R., "Learning Detailed Face Reconstruction from a Single Image". 30th IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017.
- **Or-El, R.**, Hershkovitz, R., Wetzler, A., Rosman, G., Bruckstein, A. M., Kimmel, R., "Real-Time Depth Refinement for Specular Objects". 29th IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016.
- **Or-El, R.**, Rosman, G., Wetzler, A., Kimmel, R., Bruckstein, A. M., "RGBD-Fusion: Real-Time High Precision Depth Recovery". 28th IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015.
- Lichtigstein, A.*, **Or-El, R.***, Nakhmani, A., "Autonomous Robot Control with DSP and Video Camera using MATLAB State-Flow Chart". In IEEE 4th European Education and Research Conference (EDERC), December 2010. pp. 170-174. (*equal contribution)

Book Chapters

- **Or-El, R.**, Richardson, E., Sela, M., Hershkovitz, R., Wetzler, A., Rosman, G., Bruckstein, A. M., Kimmel, R., "RGBD-Fusion: Depth Refinement for Diffuse and Specular Objects". Advances in Photometric 3D-Reconstruction, pp. 73-113. Springer, Cham, 2020.

Honors

- 2008 EE dean honors list, Technion – Israel Institute of Technology.
- 2009 EE dean honors list, Technion – Israel Institute of Technology.
- 2010 EE dean honors list, Technion – Israel Institute of Technology.
- 2015 Graduated M.Sc cum laude, Technion – Israel Institute of Technology

Technical and Personal skills

- **Programming Languages:** Proficient in Matlab, Python, C, C++, LaTeX.
- **Languages:** Fluent in English and Hebrew.

Interests and extra-curricular activities

Traveling, Hiking, Tennis, Basketball, Swimming, Soccer