Kyrollos Yanny

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EDUCATION

University of California, Berkeley & University of California, San Francisco *Dec 2021*
PhD: Bioengineering. Advisor: ***Laura Waller****.*

University of California, Los Angeles *June 2016*
Bachelor of Science: Bioengineering (High Honors).

RESEARCH FOCUS

My research is in computational imaging, which is the joint design of hardware and algorithms for imaging and display systems. My work combines **optical design**, **convex optimization** and **deep learning** to achieve capabilities that are not possible with conventional setups. I designed systems for single-shot 3D imaging, hyperspectral imaging, under-display cameras, and digital holographic microscopy as well as deep-learning architectures for fast spatially varying deconvolution.

INDUSTRY EXPERIENCE

Facebook Reality Labs (Oculus Research) *Aug 2020 - Feb 2021*
Research Intern. Display Systems Research Group.

Microsoft Research (MSR) *Jun 2020 - Aug 2020*
Research Intern. Applied Sciences Group.

SELECTED PUBLICATIONS

- **Spectral DiffuserCam: lensless snapshot hyperspectral imaging with a spectral filter array**
  Kyrollos Yanny*, Kristina Monakhova*, Neerja Aggarwal, and Laura Waller.
  Optica - 2020.
- **Miniscope3D: optimized single-shot miniature 3D fluorescence microscopy**
  Kyrollos Yanny*, Nick Antipa*, William Liberti, Sam Dehaeck, Kristina Monakhova, Fanglin Linda Liu, Konlin Shen, Ren Ng, and Laura Waller.
  Light: Science & Applications (Nature Publishing Group) - 2020.
- **Fourier diffuserScope: single-shot 3D Fourier light field microscopy with a diffuser**
  Fanglin Linda Liu, Grace Kuo, Nick Antipa, **Kyrollos Yanny**, Laura Waller.
  Optics Express - 2020.
- **Learned reconstructions for practical mask-based lensless imaging**
  Kristina Monakhova, Joshua Yurtsever, Grace Kuo, Nick Antipa, **Kyrollos Yanny**, and Laura Waller.
  Optics Express - 2019.
- **A deep learning-enabled portable imaging flow cytometer for cost-effective, high-throughput, and label-free analysis of natural water samples**
  Zoltán Gorocs, Miu Tamamitsu, Vittorio Bianco, Patrick Wolf, Shounak Roy, Koyoshi Shindo, **Kyrollos Yanny**, Yichen Wu, Hatice Ceylan Koydemir, Yair Rivenson & Aydogan Ozcan.
  Light: Science & Applications (Nature Publishing Group) - 2018.

HONORS & AWARDS

- National Science Foundation Graduate Research Fellowship Award (**NSF GRFP**) 2016
- UCLA HHMI Undergraduate Research and Innovation Program **Best Presentation Award** 2016
- UCLA HHMI Undergraduate Research and Innovation Program **Best Project Award** 2015
- UCLA HHMI Undergraduate Research and Innovation Program **Best Demo Award** 2015
- UCLA Bioengineering Undergraduate **Research Award** 2015

KEY SKILLS

- **Programming Languages:** Matlab, Python (TensorFlow & PyTorch).
- **Software:** OpticStudio (Zemax), Freefrom 3D GRIN design, Phase-mask Design, Autodesk Inventor 3D modeling, Eagle PCB Modeling.
- **Hardware:** Optical and microscopy setups, Arduino microcontrollers, Raspberry Pi, Open ROV submarines, Laser cutters, 3D printers.
- **Cleanroom Skills:** Nanoscribe 3D Printer (Freeform micro-optics printer)

STUDENTS MENTORED

- **Melvin Abzun**, UCSC, 2017
- **Kiana Go**, UCB, 2018
- **Brandon Schellhaass**, UCB, 2019