Kevin G. Chan

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Education

Ph.D., Electrical & Computer Engineering, University of California, Santa Barbara **2017**
- Major: Signal & Image Processing
- Adviser: Dr. Michael Liebling
- Group: Systems Bioimaging Lab
- Thesis: Computational Imaging Methods for Improving Resolution in Biological Microscopy

M.S., Electrical & Computer Engineering, University of California, Santa Barbara **2013**

B.S., Engineering, Harvey Mudd College **2011**

Experience

Graduate Student Researcher **2012 – 2017**
Systems Bioimaging Laboratory, University of California, Santa Barbara
- Developed state-of-the-art image reconstruction algorithms, including temporal superresolution, deconvolution, tomographic reconstruction, and blood flow visualization.
- Developed computational imaging methods that combine novel instrumentation hardware with image processing algorithms for fluorescence microscopy.
- Applied computational image processing algorithms to in-vivo imaging of developing zebrafish.
- Developed image processing software tools for ImageJ and Imaris using Java, Matlab, and C/C++.

Computational Imaging Intern **2015 – 2016**
Idiap Research Institute, Martigny, Switzerland
- Designed, assembled, and tested a prototype computational imaging system with active illumination.
- Developed a video reconstruction algorithm for improving temporal resolution.

Video, Signal Processing, and Algorithms Intern **2015**
FLIR Systems, Goleta, CA
- Developed simulations of image processing algorithms for infrared camera systems.
- Implemented single image superresolution and upsampling for low-resolution infrared camera sensors.
- Implemented a spatially-variant, point-spread-function-aware algorithm for infrared image deblurring.

Teaching Experience

Teaching Assistant **2011 – 2015**
Electrical & Computer Engineering Department, University of California, Santa Barbara
- ECE 2A, 2B, 2C: Circuits, Devices, and Systems
- ECE 15A: Fundamentals of Logic Design
- ECE 178: Digital Image and Video Processing
- ECE 278B: Principles of Biological Microscopy

Research Mentor **2012 – 2013**
Research Mentorship Program, University of California, Santa Barbara

Research Mentor **2013**
Condor Techs, University of California, Santa Barbara

Skills & Abilities

- Matlab, Java, C, C++, C#, Python
- Microsoft Office, LaTeX, SVN
- ImageJ, Imaris, Adobe Photoshop, Adobe Illustrator
- Optical design, PCB design

Publications

K. G. Chan, S. Calinon, and M. Liebling, "Temporal superresolution imaging of repeating processes using a single camera and active illumination," (submitted).

K. G. Chan, S. J. Streichan, L. A. Trinh, and M. Liebling, "Simultaneous temporal superresolution and denoising for cardiac fluorescence microscopy," IEEE Transactions on Computational Imaging, vol. 2, no. 3, pp. 348–358, 2016.

K. G. Chan and M. Liebling, "A point-spread-function-aware filtered backprojection algorithm for focal-plane-scanning optical projection tomography," in IEEE International Symposium on Biomedical Imaging, 2016.

N. Chacko, **K. G. Chan**, and M. Liebling, "Intensity-based point-spread-function-aware registration for multi-view applications in optical microscopy," in IEEE International Symposium on Biomedical Imaging, 2015.

K. G. Chan and M. Liebling, "Estimation of divergence-free 3D cardiac blood flow in a zebrafish larva using multi-view microscopy," in IEEE International Symposium on Biomedical Imaging, 2015.

K. Chan, L. Trinh, and M. Liebling, "A temporal superresolution method applied to low-light cardiac fluorescence microscopy," in Proceedings of the IEEE Asilomar Conference on Signals, Systems and Computers, 2013.