Gregory J. Ongie (Updated April 21, 2016)

Contact Information

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Research Interests

Novel reconstruction methods for magnetic resonance imaging, compressed sensing.

Education

University of Iowa, Iowa City, IA

Ph.D., Applied Mathematical and Computational Sciences, *Expected:* May 2016

- Thesis Topic: *Recovery of Multidimensional Piecewise Polynomial Signals: Discrete and Continuous Methods*
- Advisor: Mathews Jacob, Ph.D

M.S., Mathematics, Aug 2011

Coe College, Cedar Rapids, IA

B.S., Mathematics and Physics, May 2008

Research Experience

Research Assistant Jan 2013 to present
Department of Electrical and Computer Engineering,
University of Iowa
Supervisor: Mathews Jacob, Ph.D

Teaching Experience

Research Experience for Undergraduates (REU) Mentor June-Aug 2011
University of Iowa
Supervisor: Palle Jorgensen, PhD.

- Led a group of four upper-level undergraduate students on an image processing research project

Teaching Assistant Aug 2010–Dec 2013
Multivariable Calculus for Engineers
Calculus I & II
Calculus I for Biology Students

Service

Heartland Talks Liaison Oct 2011 – Feb 2012

- Coordinated student talks at nearby universities.

Graduate and Undergraduate Student Seminar Co-chair Jan 2011 – Dec 2011

- Organized a student-run seminar to engage undergraduates in advanced mathematics.

References

Mathews Jacob
Associate Professor Phone: +1 319-335-6420
Department of Electrical and Computer Engineering
University of Iowa E-mail: mathews-jacob@uiowa.edu

Rachel Ward
Assistant Professor Phone: +1 512-471-0144
Department of Mathematics E-mail: rward@math.utexas.edu
University of Texas at Austin

Ivan Selesnick
Professor Phone: +1 718-260-3416
Department of Electrical and Computer Engineering E-mail: selesi@nyu.edu
NYU Polytechnic School of Engineering

Track Record

(Top three selected publications in blue)

Pending Journal Publications

G. Ongie and M. Jacob. "Off-the-grid Recovery of Piecewise Constant Images from Few Fourier Samples." Accepted to SIAM Journal of Imaging Sciences. 2016.

Refereed Journal Publications

1. **G. Ongie** and M. Jacob. "Recovery of Discontinuous Signals Using Group Sparse Higher Degree Total Variation." Signal Processing Letters, 22(9), 1414-1418. 2015.
2. Y. Moshin, **G. Ongie**, and M. Jacob, "Iterative Shrinkage Algorithm for Patch Smoothness Regularized Medical Image Recovery." IEEE Transactions on Medical Imaging. 2015.
3. **G. Ongie***, Y. Hu*, S. Ramani, M. Jacob."Generalized Higher Degree Total Variation." IEEE Transactions on Image Processing, 23(6), 2423-2435. 2014. (*equal authorship)

Conference Publications

1. **G. Ongie** and M. Jacob. "A Fast Algorithm for Structured Low-Rank Matrix Recovery with Applications to Undersampled MRI Recovery." International Symposium on Biomedical Imaging (ISBI). Prague, Czech Republic. 2016.
2. **G. Ongie** and M. Jacob. "Recovery of Piecewise Smooth Images from Few Fourier Samples." Sampling Theory and Applications (SampTA). Washington, D.C. 2015.
3. **G. Ongie** and M. Jacob. "Super-resolution MRI Using Finite Rate of Innovation Curves." International Symposium on Biomedical Imaging (ISBI). Brooklyn, NY. (Best student paper award winner)
4. **G. Ongie**, Y. Hu, M. Jacob. "Higher Degree Total Variation for 3-D Image Recovery." International Symposium on Biomedical Imaging (ISBI). Beijing, China. 2014.
5. Y. Moshin, **G. Ongie**, M. Jacob. Accelerated MRI Using Iterative Non-local Shrinkage. Annual Conference of the Engineering in Medicine and Biology Society (EMBC). Chicago, IL. 2014.

Presentations

Invited Talks

- "Off-the-grid Compressive Imaging," ICES Seminar, U. Texas–Austin March 2016

Conference Talks

- International Symposium on Biomedical Imaging (ISBI). Prague, Czech Republic. April 2016
- Sampling Theory and Applications (SampTA), Washington, D.C. May 2015
- International Symposium on Biomedical Imaging (ISBI). Brooklyn, NY. May 2015
- International Symposium on Biomedical Imaging (ISBI). Beijing, China. May 2014

Poster Presentations

- IMA Workshop on Optimization and Parsimonious Modeling. Jan 2016
  University of Minnesota.
- Co-Prime Sensing Basic Research Challenge Program Review. May 2015
  George Mason University, Fairfax, Virginia.

Public Outreach Talks

- Lindsay Seminar. Coe College, Cedar Rapids, IA. May 2012 & 2013.

Editoral Acitivies

Ad-hoc reviewer for:

- Transactions on Medical Imaging, IEEE
- Signal Processing Letters, IEEE
- Information Processing Letters, Elsevier
- PLOS ONE
- Conference Proceedings of the International Symposium on Biomedical Imaging, 2015 & 2016.

Awards

Conference Awards

- Best Student Paper Award. IEEE/EMBS International Symposium on Biomedical Imaging, New York. May 2015.

Student Awards

- Presidential Fellowship, University of Iowa. 2008–2013
  - Five year fellowship, including three full years of financial support.
- Phi Beta Kappa Membership. Coe College. 2008.