

# Kyle Hasenstab

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## Education

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- 2015      PhD in Statistics  
University of California, Los Angeles  
Advisor: Damla Senturk, PhD, Department of Biostatistics  
Thesis: Functional Analysis of Event Related Potentials
- 2012      MS in Statistics  
University of California, Los Angeles  
Advisor: Mark Hansen, PhD, Department of Statistics  
Thesis: Analysis of Mobile Health Asthma Management Data
- 2009      B.S. in Mathematics  
B.A. in Quantitative Economics  
University of California, Irvine

## Experience

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- 2020-present      **Assistant Professor, Statistics and Data Science**  
*Department of Mathematics and Statistics, San Diego State University*
- 2017-2020      **Postdoctoral Scholar**  
*Department of Radiology (Computer Vision and Machine Learning), UC San Diego*  
*Department of Family Medicine and Public Health (Biostatistics), UC San Diego*
- 2016-2017      **Data Scientist**  
*AT&T/Cricket, Advanced Analytics Team*
- 2016      **ORISE/CDC Postdoctoral Fellow, Mathematical Statistician**  
*Chronic Viral Diseases Branch, Centers for Disease Control and Prevention*
- 2013-2015      **PhD Graduate Student** – Damla Senturk, PhD, Department of Biostatistics  
*Center for Autism Research and Treatment, University of California, Los Angeles*  
Thesis: Modeling Time-varying Trends in ERP Data with Applications to an Implicit Learning Paradigm in Autism
- 2015      **Mathematical Statistician Intern**  
*Center for Disclosure Avoidance Research, United States Census Bureau*
- 2011-2013      **MS Graduate Student** – Mark Hansen, PhD, Columbia University  
*Center for Embedded Networked Sensing, University of California, Los Angeles*  
Thesis: Statistical Directions for the Analysis of Mobile Health Asthma Management Data
- 2008-2009      **Undergraduate Research Assistant** – Ivan Jeliakov, PhD  
*Department of Economics, University of California, Irvine*  
Investigated the effects of promotion on faculty productivity of economists in the University of California system using a statistical model based on the Gaussian copula

## Committees and Professional Roles

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2020-present    **Computational Science Doctoral Faculty Member**  
*San Diego State University*

2020-2021    **Diversity, Equity, and Inclusion Committee**  
*San Diego State University*

## Mentorship

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2017-present    **Joseph Tabalon, MS Student**  
*Department of Mathematics and Statistics, San Diego State University*

- Lung image registration to automate quantification of lung disease

2017-present    **Timoteo Delgado, Analyst**  
*Department of Radiology, University of California, San Diego*

- Artificial intelligence applications to liver imaging

2018-2020    **Nancy Yuan, PhD Student**  
*Department of Biomedical Informatics, University of California, San Diego*

- Prognostication of lung disease using statistical methods

2018-2020    **Wenyi Lin, PhD Student**  
*Department of Family Medicine and Public Health, University of California, San Diego*

- Interpretability of artificial intelligence algorithms in the context of liver imaging

## Teaching

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2020-present    **Assistant Professor, Data Science**  
*Department of Mathematics and Statistics, San Diego State University*

- Fall 2020, Applied Linear Regression

2019    **Lecturer**  
*Department of Family Medicine and Public Health, University of California, San Diego*

- Fall 2019, Biostatistics in Public Health

2019    **Associate Professor**  
*Department of Mathematics, MiraCosta College*

- Fall 2019, Precalculus I: College Algebra

2017-2019    **Staff and student mentor**  
*Department of Biostatistics and Radiology, University of California, San Diego*

2011-2014    **DataFest Volunteer**  
*Department of Statistics, University of California, Los Angeles*

2011    **Teaching Assistant, Linear Models**  
*Department of Statistics, University of California, Los Angeles*

2011    **Teaching Assistant, Explorations in Statistics Research Program**  
*Columbia University*

2011                    **Reader**, Introduction to Statistics  
*Department of Statistics, University of California, Los Angeles*

2009-2010            **Math Standards Specialist**  
MIND Research Institute

### **Publications – Substantial Contribution**

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**Hasenstab K**, Yuan N, Retson T, Conrad DJ, Kligerman S, Lynch DA, Hsiao A. (2020) Staging COPD Severity with Deep Learning-based Quantitative Lung Characterization. *Radiology: Cardiothoracic*. In press.

\***Hasenstab K**, Cunha GM, Ichikawa S, Dehkordy SF, Lee MH, Kim SJ, Schlein A, Covarrubias Y, Sirlin CB, Fowler KJ. (2021) CNN color-coded difference maps accurately display longitudinal changes in liver MRI-PDFF. doi: 10.1007/s00330-020-07649-0.

Lin W, **Hasenstab K**, Cunha GM, Schwartzman A. (2020) Comparison of Handcrafted Features and Convolutional Neural Networks for Liver MR Image Adequacy Assessment. *Scientific Reports*. 10:20336.

Hansen K, **Hasenstab K**, and Schwartzman A. (2020) Estimating Mountain Glacier Flow Lines by Local Linear Regression-Based Gradient Descent. *IEEE Transactions on Geoscience and Remote Sensing*. DOI: 10.1109/TGRS.2020.3035513.

\*Cunha GM, **Hasenstab K**, Higaki A, Wang K, Delgado T, Brunsing RL, Schlein A, Schwartzman A, Hsiao A, Sirlin CB, Fowler K. (2020) Convolutional neural network-automated hepatobiliary phase adequacy evaluation may optimize examination time. *European Journal of Radiology* 14(124):108837.

\***Hasenstab K**, Cunha GM, Higaki A, Ichikawa S, Wang K, Delgado T, Brunsing RL, Schlein A, Bittencourt LK, Schwartzman A, Fowler K, Hsiao A, Sirlin CB. (2019) Fully automated convolutional neural network-based affine algorithm improves liver registration and lesion co-localization on hepatobiliary phase T1-weighted MR images. *European Radiology Experimental* 3(1):43.

\***Hasenstab K**, Scheffler, A, Telesca, D, Sugar, C, Jeste, S, and Senturk, D (2017) A Multi-Dimensional Functional Principal Components Analysis of EEG Data. *Biometrics* 73(3):999-1009.

**Hasenstab K**, Sugar, C, Telesca, D, Jeste, S, and Senturk, D (2016) Robust Functional Clustering of ERP Trends Across an Implicit Learning Paradigm in Autism. *Biostatistics* 17(3), 484-498.

**Hasenstab K**, Sugar, C, Telesca, D, Jeste, S, McEvoy, K and Senturk, D (2015) Identifying longitudinal trends within EEG experiments. *Biometrics* 71(4), 1090-1100.

McEvoy, K, **Hasenstab K**, Senturk, D Jeste, S (2015) Physiologic artifacts in the resting state EEG of young children: Methodological considerations for noisy data. *Biological Psychiatry* 9(1), 104-114.

\* indicates dual first authorship

### **Publications – Statistical Consulting/Other**

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Wang K, Mamidipalli A, Retson T, Bahrami N, **Hasenstab K**, Blansit K, Bass E, Delgado T, Cunha GM, Middleton MS, Loomba R, Neuschwander-Tetri A, Sirlin CB, Hsiao A. (2019) Automated CT and MRI Liver Segmentation and Biometry Using a Generalized Convolutional Neural Network. *Radiology: AI* 1(2):180022.

Ghahari E, Bowd C, Zangwill LM, Proudfoot J, **Hasenstab K**, Hou H, Penteado RC, Manalastas PIC, Moghimi S, Shoji T, Christopher M, Yarmohammadi A, Weinreb RN. (2019) Association of Macular and Circumpapillary Microvasculature

with Visual Field Sensitivity in Advanced Glaucoma. American Journal of Ophthalmology. doi: 10.1016/j.ajo.2019.03.004.

Moghimi S, Bowd C, Zangwill LM, Penteado RC, **Hasenstab K**, Hou H, Ghahari E, Manalastas PIC, Proudfoot J, Weinreb RN. (2019) Measurement floors and dynamic ranges of optical coherence tomography and angiography in glaucoma. Ophthalmology. doi: 10.1016/j.ophtha.2019.03.003.

Moghimi S, Zangwill LM, Manalastas PIC, Suh MH, Penteado RC, Hou H, **Hasenstab K**, Ghahari E, Bowd C, Weinreb RN. (2019) Association Between Lamina Cribrosa Defects and Progressive Retinal Nerve Fiber Layer Loss in Glaucoma. JAMA Ophthalmology. doi: 10.1001/jamaophthalmol.2018.6941.

Moghimi S, Zangwill LM, Penteado RC, **Hasenstab K**, Ghahari E, Hou H, Christopher M, Yarmohammadi A, Manalastas PIC, Shoji T, Bowd C, Weinreb RN (2018) Macular and optic nerve head vessel density and progressive retinal nerve fiber layer loss in glaucoma. Ophthalmology. doi: 10.1016/j.ophtha.2018.05.006.

Meshi A, Lin T, Dans K, Chen KC, Amador M, **Hasenstab K**, Muftuoglu IK, Nudleman E, Chao D, Bartsch DU, Freeman WR (2018) Comparison of retinal pathology visualization in multispectral scanning laser imaging. Retina. doi: 10.1097/IAE.0000000000002156.

Ghahari E, Bowd C, Zangwill LM, Suh MH, Shoji T, **Hasenstab K**, Saunders LJ, Moghimi S, Hou H, Manalastas PIC, Penteado RC, Weinreb RN (2018) Macular vessel density in glaucomatous eyes with focal lamina cribrosa defects. Journal of Glaucoma 27(4), 342-349.

Ghahari E, Bowd C, Zangwill LM, Suh MH, Shoji T, **Hasenstab K**, Saunders LJ, Moghimi S, Hou H, Manalastas PIC, Penteado RC, Weinreb RN (2018) Progression of primary open-angle glaucoma in diabetic and nondiabetic patients. American Journal of Ophthalmology 189, 1-9.

Yarmohammadi A, Zangwill LM, Manalastas PIC, Fuller NJ, Diniz-Filho A, Saunders LJ, Suh MH, **Hasenstab K**, Weinreb RN (2018) Peripapillary and macular vessel density in patients with primary open-angle glaucoma and unilateral visual field loss. Ophthalmology 125(4), 578-587.

Jeste, S. S., Kirkham, N., Senturk, D., **Hasenstab, K.**, Sugar, C., Kupelian, C., Baker, E., Sanders, A. J., Shimizu, C., Norona, A., Paparella, T., Freeman, S. F.N. and Johnson, S. P. (2015) Electrophysiological evidence of heterogeneity in visual statistical learning in young children with ASD. Developmental Science 18(1), 90-105.

## **Fellowships, Grants, & Awards**

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<b>2019</b>	<b>International Society for Magnetic Resonance in Medicine Summa Cum Laude Merit Award</b>
2018	NVIDIA GPU Grant Program Recipient
<b>2016</b>	<b>Centers for Disease Control and Prevention: Oak Ridge Institute for Science and Education Fellowship (1 year of funding)</b>
2015	United States Census Bureau On-the-Spot Award
<b>2012-2015</b>	<b>National Science Foundation Graduate Research Fellowship Program (NSF GFRP) (3 years of funding)</b>
2009	UC Irvine: Cum Laude
2004-2009	UC Irvine: Deans Honor List 11 quarters

## **Abstracts, Posters, and Talks**

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2020	Computational Science Research Center, "Machine Learning Techniques for Biomedical Image Characterization", SDSU
2020	Department of Mathematics and Statistics, "Machine Learning Techniques for Biomedical Image Characterization", SDSU

- 2020 Department of Mathematics and Statistics, "Deep Learning Driven Organ Volumetry and Characterization", SDSU
- 2019 European Society of Gastrointestinal and Abdominal Radiology (ESGAR), "Machine learning-base fully-automated image registration improves reader confidence and lesion colocalization in cross-sectional liver studies"
- 2019 International Society for Magnetic Resonance in Medicine (ISMRM), "Automated assessment of liver parenchymal enhancement on hepatobiliary phase MR images using a convolutional neural network"
- 2019 ISMRM, "Fully-automated registration of cross-sectional liver images using fully convolutional and affine transformation networks"
- 2019 University of California, San Diego Public Health Research Day, "Comparison of automated liver image quality evaluation using handcrafted features and convolutional neural networks"
- 2019 University of California, San Diego Public Health Research Day, "Machine learning-base fully-automated image registration improves reader confidence and lesion colocalization in cross-sectional liver studies"
- 2018 Society of Computed Body Tomography and Magnetic Resonance (SCBT-MR) annual meeting, "Liver stiffness estimation using fully convolutional neural networks applied to phase images from two-dimensional MRE"
- 2017 Department of Biostatistics, "Functional Analysis of ERP Trends", UCSD
- 2015 Undergraduate course "Thesis research opportunities in Computational and Systems Biology", UCLA
- 2015 Chronic Viral Diseases Branch, Centers for Disease Control and Prevention, "Functional Analysis of ERP Trends"
- 2015 Tobacco and Volatiles Branch, Centers for Disease Control and Prevention, "Functional Analysis of ERP Trends"
- 2015 Research and Methodology Directorate, US Census Bureau, "Disclosure Risk and Data Utility of the Microdata Analysis System"
- 2015 Research and Methodology Directorate, US Census Bureau, "Functional Analysis of ERP Trends"