

Andrew L. Beers

Seattle • 301-300-0034 • albeers@uw.edu • [Github](#) • [Google Scholar](#)

Education

University of Washington, PhD Student in Human Centered Design & Engineering (2019-)

Brown University, BA in Environmental Studies, Magna Cum Laude (2015)

- [Best Research Project 2015](#), Institute at Brown for Environment and Society; [Library Innovation Prize 2015](#), Brown University (sole recipient); [Explore Grant 2013](#), Social Innovation Initiative (SII) at Brown University.

Research

Quantitative Translational Imaging Lab, Center for Machine Learning @ the MGH Martinos Center for Biomedical Imaging, Boston, MA, Research Assistant (2016-2017), Programmer (2017)

- Design deep learning models for 3D image segmentation, synthesis, classification, regression, denoising, sequence generation, and superresolution of medical imaging data using Tensorflow and Keras.
- Develop open-source software packages (DeepNeuro, 3D Slicer, Glue) for both clinical and academic users.
- Design curricula and give lectures for machine learning classes at MIT and the Martinos Center.

MedGIFT, University of Applied Science in Western Switzerland (HES-SO), Sierre, Switzerland, Summer Intern (Summer 2018)

- Developed algorithms to generate high-resolution synthetic pathology images for prostate cancer data as part of a summer exchange program with our lab in MGH.

Brown University Center for Environmental Studies, Providence, RI, Research Assistant (2014-15)

- Made a website to visualize 134 years of iceberg data using Javascript, and d3.js. Modeled iceberg observer behavior to determine unrecorded changes in observers in the historical record.

American Civil Liberties Union, Boston, MA, Researcher (2014)

- Contributed to a rebuttal for an expert witness in an upcoming state-level reproductive justice case, and critiqued statistical methods in the opposition's supporting epidemiological literature.

Employment

American Civil Liberties Union, New York, NY, Online Production Assistant (2015-16)

- Ran statistical analysis on the ACLU's email fundraising campaigns, and coded responsive donation pages.

Ceres, Boston, MA, Insurance Intern (2014)

- Created a tool with VBA and Bloomberg to track eco-friendly "green bonds" in the global market.

Planned Parenthood Federation of America, Washington, DC, Digital Fundraising Intern (2013)

- Created a tool in R to evaluate and rank the effectiveness of PPFA's national fundraising campaigns.

Skills

Programming: Experienced with Python (Tensorflow / Keras / Packaging), R (Shiny), Matlab, Javascript (d3.js, tensorflow.js), C++. Comfortable with CUDA, Linux, Docker, GPU Programming, ArcGIS, LaTeX, SPSS, Adobe Suite, and VBA. Extensive knowledge of software and data formats used in medical image analysis.

Selected Journal Publications

Automatic assessment of glioma burden: A deep learning algorithm for fully automated volumetric and bi-dimensional measurement. Ken Chang (co-author), Andrew Beers (co-author), Harrison X Bai (co-author), James M Brown, [...], Jayashree Kalpathy-Cramer. Neuro-oncology (2019).

Automated Diagnosis of Plus Disease in Retinopathy of Prematurity Using Deep Convolutional Neural Networks.

James M. Brown; J. Peter Campbell; Andrew Beers; Ken Chang; [...], Jayashree Kalpathy-Cramer; Michael F. Chiang. JAMA Ophthalmology (2018). <https://goo.gl/9pyj9U>

Semi-Automated Pulmonary Nodule Interval Segmentation using the NLST data.

Yoganand Balagurunathan, Andrew Beers, Jayashree Kalpathy-Cramer, Michael McNitt-Gray, [...], Dimitry Goldgof. Medical Physics (2018).

<https://goo.gl/Ujq43n>

Selected Conference Papers, arXiv

High-resolution medical image synthesis using progressively grown generative adversarial networks.

Andrew Beers, James Brown, Ken Chang, J. Peter Campbell, Susan Ostmo, Michael F. Chiang, and Jayashree Kalpathy-Cramer. arxiv (2018). <https://arxiv.org/pdf/1805.03144.pdf>

Sequential neural networks for biologically-informed glioma segmentation.

Beers, Andrew, Ken Chang, James Brown, Emmett Sartor, C. P. Mammen, Elizabeth Gerstner, Bruce Rosen, and Jayashree Kalpathy-Cramer. SPIE 2018. <https://arxiv.org/abs/1709.02967>.

DeepNeuro: an open-source deep learning toolbox for neuroimaging.

Andrew Beers, James Brown, Ken Chang, Katharina Hoebel, Elizabeth Gerstner, Bruce Rosen, Jayashree Kalpathy-Cramer. arxiv (2018).

<https://arxiv.org/pdf/1808.04589.pdf>

Talks / Conferences

IEEE International Symposium on Biomedical Imaging 2018 – Session Chair, “Lung Nodule Malignancy Prediction Based on Sequential CT Scans”. Gave two talks, one explicating our previous work on multi-interval lung nodule segmentation, and one reviewing the results of a competition on lung nodule segmentation.

BrainHack Boston 2018 – Talk, “Deep Learning @ BrainHack”

Teaching

Introduction to Deep Learning and Medical Imaging – Two series of classes teaching deep learning with Python as applied to medical imaging. The first iteration was aimed towards .NET programmers with an MGH industry partners, and the second towards more experienced Python programmers among the clinicians, professors, and researchers of MGH and Harvard Medical School. Some class lectures found at <https://bit.ly/2xTXDXd>.

Guest Lecture, MIT Winter Session – Gave a pair of lectures on feature extraction and computer vision in an MIT winter class.

Press

“AI Beats Experts At Diagnosing Childhood Disease”

- <https://www.opb.org/news/article/artificial-intelligence-ai-childhood-eye-disease/>

“A story in time: Icebergs & Climate Change”: Rhode Island NSF Epscor

- <http://web.uri.edu/rinsfepscor/2015/06/15/a-story-in-time-icebergs-climate-change/>.

Advocacy

Lucy Parsons Center – Organizing Collective Member (2016-2018)

- Promoted events and organized finances for a radical community center and bookstore in Jamaica Plain.

Bluestockings Magazine – Art Director (2014-15), Designer (2013-14)

- Designed three 100-page print issues, illustrated 1-3 articles per week, and managed a staff of 10 illustrators for the feminist magazine’s website, which reached 10,000+ hits on featured pieces.