Daniel J. Butler
Bioinformatics Analyst III
Salk Institute for Biological Studies

Email: dbutler@salk.edu
Website: djbutler.github.io
GitHub: github.com/djbutler
Mobile: (585) 615-7082

Employment

2018-23	Salk Institute – Research Engineer, Bioinformatics Analyst
2016-2018	Freelance Software Developer
2011-2016	U. of Washington – PhD Student, Robotics / AI / Vision
2014-15	Heuristic Labs (startup) – Computer Vision Engineer
2011	Max Planck Institute for Intelligent Systems – Intern
2009-10	MIT Lincoln Laboratory – Assistant Technical Staff

Honors

Koenderink Prize for contributions to computer vision, 2022
Fulbright Fellowship, 2012

Education

PhD work in Computer Science - University of Washington, 2014-2016
MS, Computer Science – University of Washington, 2014
BS, Applied Math / Computer Science – Brown University, 2009 (*magna cum laude*)

Selected Projects

Academic computing research in neuroscience & neural motor control (@ Salk Institute)

Ran hundreds of ***deep learning*** experiments (TensorFlow, PyTorch, Docker)
Created a ***data management system*** for organizing millions of images (Python, SQL)
Wrote ***performance-sensitive*** software for multi-camera capture system (C++, Arduino)
Developed ***web frontend*** and ***containerized backend*** (React, Docker, Flask, celery)
Published a paper in **Nature Communications** (in press) and submitted a patent
Other tools used: ***version control*** (git), 3D printing, Adobe Illustrator, reinforcement learning

Python library for porting Keras deep learning code to Apple Metal GPU (@ Body Labs)
Translated Keras research code into ***performant Apple Metal GPU code*** (Python, Swift)
Used in a production iOS app, acquired by Amazon

Humanoid robot control interface development (@ U. of Washington)
Academic research on semi-autonomous robot control with vision and motion planning
Technologies: C++, Qt, OpenCV, Pandas, ***CircleCI continuous integration***

Custom 3D Sensor (@ Heuristic Labs)
Implemented 3D stereo calibration & reconstruction pipeline with OpenCV, MATLAB
Developed custom calibration algorithm for projector-camera stereo pair
Tools: C++, MATLAB.

Personal software projects
Time-tracking MacOS desktop application (Node.js, React, git, ***CircleCI***)
Websites and product experiments (***AWS***, ***GCP***, Netlify, Gatsby.js, React)

Publications & Patents

https://scholar.google.com/citations?hl=en&user=Hg_y1pkAAAAJ

Five papers (three first author) in **computer science**
One paper (first author) in computing-related **neuroscience**
Two patents: one granted, one submitted

Professional references available on request.