

# Dylan Royston

NEUROSCIENTIST/BIOMEDICAL ENGINEER

Pittsburgh, PA, USA

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## About me

- **Award-winning** research scientist studying human sensorimotor control and brain-computer interfaces in the **Rehab Neural Engineering Lab** at the University of Pittsburgh (PI: Dr. Jennifer Collinger).

- **Expert** in collecting analyzing and visualizing multimodal neural data, human subject research, modern theories of neural computation in human multisensory integration and motor systems.

- **Team leader** with experience in developing and executing large multidisciplinary projects, collaboratively and independently.

- **Passionate** about developing real-time neural interfaces and applying my skills and knowledge to interesting and important questions while continuing to grow as a scientist and engineer.

## Background

### PhD\* in Bioengineering

UNIVERSITY OF PITTSBURGH • CENTER FOR THE NEURAL BASIS OF COGNITION

Pittsburgh, PA

2014 - 2019\* (Anticipated-November)

### BS in Biomedical Engineering • BA in Neuroscience

UNIVERSITY OF VIRGINIA

Charlottesville, VA

2009 - 2013

## Experience

### University of Pittsburgh

GRADUATE STUDENT RESEARCHER

Pittsburgh, PA

2014-Current

- **Developing novel analysis techniques** for integrating and decoding intracortical and neuroimaging data; **Building automated pipelines** to manipulate and process complex multimodal data structures
- **Designing behavioral paradigms** and collecting awake behaving experimental data from human subjects (neuroimaging and in vivo electrophysiology)
- **Specializing** in integrating neuroimaging and intracortical implant data, neurophysiological signal processing and analysis, multimodal data visualization and interpretation
- Presenting novel research results at 15 local, national, and international scientific conferences, resulting in **10 outstanding research awards** and 2 publications

### University of Virginia

UNDERGRADUATE RESEARCHER

Charlottesville, VA

2011-2013

- **Collected and analyzed neural data** from whole-cell patch-clamp recordings in rodent brain slices; Tested efficacy of novel anti-epileptic compounds; **Awarded degree with distinction** for research thesis presentation

### Fourth River Solutions (4RS)

VICE PRESIDENT OF BUSINESS DEVELOPMENT

Pittsburgh, PA

2018-2019

- **Managing key relationships** with potential and ongoing clients (between 2-4 at once); Identifying client needs and managing engagement teams to create high-value deliverables
- **Leading development** of internal project-management tools and practices to streamline operations, resulting in new organization-wide SOP adoption

## Languages/Tools

### Languages

DATA ANALYSIS/ENGINEERING

- Matlab (8 yrs); data access and manipulation, data visualization, statistical inference and machine learning, spatial and time-series analysis, dimensionality reduction, model fitting, real-time decoding
- BASH (3 yrs); scripting neuroimaging processing and visualization pipelines
- Python (1 yr); real-time stimulus presentation and logging, data access and manipulation

### Productivity Tools

NEUROIMAGING SUITES

- SPM (6 yrs); functional/anatomical MRI processing and model estimation
- AFNI/SUMA, Freesurfer, PyCortex (3 yrs); cortical surface reconstruction and functional data visualization

DEVELOPMENT TOOLS

- GIT (2 yrs), SVN (5 yrs); version control and collaborative development
- Labview/NiDAQ (1 yr); hardware control for recording/stimulation
- Unity/Oculus/Vive (1 yr); virtual reality scene development and system integration