# Rick Farouni | Curriculum Vitae

Department of Psychology, The Ohio State University

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I am currently a doctoral candidate in quantitative psychology at the Ohio State University. My research is focused on latent variable modelling and its applications to behavioral, neuroimaging, and bioinformatics data. I hold a master's degree in mathematical statistics and I have a strong background in machine learning, multivariate statistics, and scientific computing. I am passionate about the open access movement in education, research, and academia and I am dedicated to rigorous science in the public interest.

## Education

### Academic Qualifications

- **The Ohio State University** — **Ohio, USA**
  *PhD in Quantitative Psychology* — *2015–Present*
  Advisor: Professor Robert Cudeck

  Dissertation Topic: *'Deep Latent Generative Models'*
- **The Ohio State University** — **Ohio, USA**
  *Master of Science in Statistics [GPA 3.80/4]* — *2012-2014*
- **The Ohio State University** — **Ohio, USA**
  *Master's Degree in Quantitative Psychology* — *2012-2014*

  Thesis Project: *'Latent Variable Modelling of Categorical Item Responses in a Hierarchical Bayesian Framework'*
- **The Pennsylvania State University** — **Pennsylvania, USA**
  *Bachelor's Degree in Psychology with High Distinction [GPA 3.93/4]* — *2011-2012*

### Course Projects

- **Multivariate Statistics** (STAT 7560): *'Retinotopic Mapping of the Human Visual Cortex Using Independent Component Analysis'*
- **Advanced Computational Statistics** (STAT 7730): *'Bayesian Analysis of Noisy Images Using Markov Random Fields'*
- **Statistical Consulting** (STAT 6750): *'Modelling Categorical Perception of Speech Sounds using Beta Regression'*

# Experience

## Internship

- **The Department of Biomedical Informatics Summer Internship Program (BMI SIP)**
  *Research Lab of Professor Ewy Mathé, The Ohio State University* *2016*

  ***Project***: Developing an R package and a Shiny app for the analysis of data generated from genome-wide chromatin accessibility assays such as ATAC-seq and DNase-seq with the goal of identifying regulatory elements involved in the cancer epigenetic landscape.

## Teaching Experience

- **Graduate Teaching Associate** **Ohio, USA**
  *The Ohio State University* *2013–present*

  Teaching Assistant for Psychology 2220: Data Analysis in Psychology

- **Test Preparation Instructor** **Moscow, Russia**
  *Instructor of the Graduate Management Admission Test (GMAT)* *2009-2012*

- **Teacher of English as a Foreign Language** **Moscow, Russia**
  *Teacher of General and Academic English* *2001-2009*

## Journal Review Service

- **Psychometrika**
  *Ad Hoc Reviewer* *2015*
- **Psychological Methods**
  *Ad Hoc Reviewer* *2016*

# Conference Presentations

- **Joint Statistical Meetings** **Seattle**
  *Poster Presentation* *2015*

  ***Poster Title***: Across-Subject Predictive Modeling of fMRI BOLD Responses to Faces using a sparse Bayesian Group Factor Analysis Model

# Awards and Fellowships

- **Graduate Student Conference Presentation Award**
  *The Ohio State University* *2015*
- **The Center for Cognitive and Brain Sciences Summer Graduate Fellowship**
  *The Ohio State University* *2015*

  ***Project Proposal***: *'Decoding the Pixels of the Face Image from the Voxels of fMRI BOLD Activity Patterns'*

- **The Social and Behavioral Sciences Summer Fellowship**
  *The Ohio State University* *2014*
- **University Fellowship**
  *The Ohio State University* *2012*

## Technical Skill Set

- **Statistics and Machine Learning**
  - ***Scientific Programming Languages:*** Proficient in and comfortable transitioning between *R*, *Python*, and *Julia* depending on computing goals.
  - ***Deep Learning Frameworks:*** Experienced in using Tensorflow and MXNet.
  - ***Probabilistic Programming Languages:*** Proficient in Stan; Familiar with Venture.
- **Computer Science**
  - ***Cluster and High-Performance Computing:*** Good knowledge of running neuroimaging and bioinformatics analysis pipelines on the Ohio Supercomputer (uses the Torque scheduling system). Basic familiarity with distributed cluster computing using the Spark platform.
  - ***Web and Software Development Tools:*** LaTeX, Linux OS, Git, Docker, and Bash. Basic knowledge in website development tools such as HTML, CSS, and Jekyll.
- **Domain Specific Software**
  - ***Neuroimaging Analysis Software:*** Nipype, PyMVPA, FreeSurfer, SPM, FSL, and Pycortex.
  - ***Bioinformatics Software:*** Experienced in analysing functional genomics data using R's Bioconductor set of tools, Bowtie2, MACS2, SAMtools, and bedtools.

## Publications and Software

### Journal Papers

- Baskin, E., Farouni, R., and Mathe, E. (2016). ALTRE: workflow for defining ALTered Regulatory Elements using chromatin accessibility data. Submitted.

### Software Development

- ALTRE: A Workflow for Identifying ALTered Regulatory Elements using Chromatin Accessibility Data. Github Repo: https://github.com/Mathelab/ALTRE.

## Personal Details

- **Country of Previous Residence:** Russia (12 years)
- **Marital Status:** Married
- **Interests and Hobbies:** Evolutionary Biology, World Cuisines, Experimental Music
- **Languages Spoken:** English, Arabic, Russian, Spanish (limited)