JOY NYAANGA, PHD

Bioinformatician

Contact

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Programming

R
Python
bash
Nextflow

Tools

RStudio
Jupyter
git/GitHub
HPC

Data Science

Data visualization
Markdown reports
Machine Learning
Advanced statistical analysis

Research

Genetics & Genomics
R package development
Interdisciplinary collaboration

EDUCATION

Ph.D., Quantitative Biology **2018 - 2022**
Northwestern University | *GPA: 3.9/4.0*

M.A., Molecular Biology **2017 - 2018**
Princeton University | *GPA: 3.6/4.0*

B.S., Chemistry: Biochemistry **2013 - 2017**
B.S., Cell & Molecular Biology
John Carroll University | *GPA: 3.64/4.0*

EXPERIENCE

Bioinformatician **2022 - Present**
Northwestern University

- Manage, organize, and analyze whole-genome sequence data
- Maintain bioinformatics pipelines for variant calling, population genomics, and genome-wide association mappings

Ph.D. Candidate **2018 - 2022**
Northwestern University

- Conduct extensive analysis of large experimental data sets in R to investigate organismal growth and development
- Implement advanced analytical and statistical methods including linear mixed effect models, ANOVA/regression models, model selection, and clustering in R

Data Science Intern **May 2021 – Sept 2021**
Celsius Therapeutics – a therapeutics company leveraging single-cell RNAseq data to develop and deliver precision medicines.

- Coded extensively in Python and R to analyze single-cell RNAseq data to uncover new insights into disease progression using trajectory inference algorithms
- Generated comprehensive reports using Rmarkdown and Jupyter to deliver findings with team leads
- Maintained a reproducible coding environment on AWS EC2 instance

Graduate Researcher **2017 – 2018**
Princeton University

- Built computational ODE models in Python to study the dynamics of protein networks
- Probed RNA-protein interactions to uncover cellular changes caused by oxidative stress

PUBLICATIONS

Nyaanga, J., Crombie, T. A., Widmayer, S. J. & Andersen, E. C. easyXpress: An R package to analyze and visualize high-throughput *C. elegans* microscopy data generated using CellProfiler. *PLoS One* (2021)

Nyaanga, J. *et al.* Changes in body shape implicate cuticle stretch in *C. elegans* growth control. *Cells & Development* (2022)

[preprint] **Nyaanga, J.** & Andersen E.C. Linkage mapping reveals loci that underlie differences in *C. elegans* growth. *bioRxiv* (2022)

[preprint] Widmayer, S.J., Crombie, T.A., **Nyaanga, J.,** Evans, K.S., & Andersen E.C. *C. elegans* toxicant responses vary among genetically diverse individuals *bioRxiv* (2022)