

Nicholas Fong

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Education

M.S. Applied Mathematics
University of Washington
December 2019

B.S. Physics & Biophysics
University of Washington
December 2016
8-quarter Dean's List recipient

Skills

- Python libraries: Numpy, Pandas, SciPy, sklearn, skimage, PyPlot/seaborn
- PyTorch
- Basic C++/Java
- Bash scripting
- MATLAB
- Latex
- Basic HTML/CSS
- Windows/Mac/Linux OS
- Microsoft Office

Coursework

- Probability & Stochastic Processes
- Machine Learning & Dynamical Systems
- High-Performance Computing
- Data Analysis
- Linear Algebra & Numerical Analysis
- ODEs/PDEs
- Complex Analysis

Experience

Allen Institute for Brain Science Seattle, WA
Informatics & Data Science Intern (June - August 2019)

- Opened avenues for improved neuron tracing algorithms. Attempted to uncover morphological classes for axon and dendrite terminals via unsupervised machine learning.
- Presented work to interns and morphology group, and handed over compiled suggestions for future work to my supervisor.

UWMC Department of Radiation Oncology Seattle, WA
Research Assistant (May 2016 - September 2018)

- Contributions to an NCI-funded IMRT project demonstrating the efficacy of a low-cost therapeutic modality lead to a 2018 top-ten *Physics World* breakthrough. Data collection and analysis lead to several key figures in the publication.
- Created Python script for evaluating lymphopenia risk during radiation therapy, launching a new project for the group.
- Constructed a quality assurance program from scratch to open the doors for deeper research projects.

UW Academic Support Programs
Center for Learning & Undergraduate Enrichment Seattle, WA
Physics Tutor (September 2014 - June 2018)

- Formed an effective and cooperative team as lead physics tutor my final year. Scheduled exam reviews, trained two new employees, and hired new tutors.
- Fostered the success of many undergraduates by leading exam reviews with attendances of up to 180 people, and assisted numerous other students one-on-one through difficult coursework.
- Mentored students by offering them advice and encouragement regarding coursework, exam preparation, and college in general.

UW Department of Physics
Center for Experimental Nuclear Physics & Astrophysics Seattle, WA
Research Assistant (April 2015 - March 2016)

- Ensured a key component of KATRIN, an experiment estimating the mass of the neutrino, properly vetoed the effects of cosmic ray muons from relevant data.
- Successfully demonstrated the presence of muons and thermal noise by running tests and analyzing data collected by new silicon photomultiplier tubes.

Publications

J. Van Schelt, *et al* [inc. N. Fong]. "A Ring-based Compensator IMRT System Optimized for Low- and Middle-Income Countries: Design and Treatment Planning Study". *Medical Physics*. July 2018, Vol. 45, pgs. 3275-3286.

M.W. Macomber, *et al* [inc. N. Fong]. "A Novel Compensator Device to Deliver IMRT With Cobalt-60 Units in Low- and Middle-Income Countries: A Comparative Dosimetric Analysis". *International Journal of Radiation Oncology · Biology · Physics*. Oct 2017, Vol. 99, Issue 2, pg. S231.