

Amaya Andrews

Software Engineer

アマイア・アンドリュース

ソフトウェアエンジニア

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EDUCATION 学歴

- 2020 - 2022 **M.A. Illustration** Academy of Art University
- 2017 - 2019 **M.A. Physics and Astronomy** from Stony Brook University
- 2013 - 2017 **B.Sc. Physics (with Astrophysics Option)** from New Mexico Institute of Mining and Technology
- 2013 - 2017 **B.Sc. Mathematics** from New Mexico Institute of Mining and Technology

SKILLS 特技

Programming Python, HTML, CSS, JavaScript, SQL, React, Rust, Fortran, C, Bash, R, MatLab, Go
Environments Linux, git, Atom, vi, Jupyter Notebook, LaTeX
Algorithms Finite Difference, Sparse Matrix Linear Algebra, Direct and Iterative Methods
Design Figma, Adobe Photoshop, Adobe Illustrator, Adobe InDesign, Procreate, Adobe Animate
HPC Parallel algorithms, MPI, OpenMP, OpenACC

PROFESSIONAL EXPERIENCE 職歴

- 11/2019 - 8/2020** | Elyah Software LLC | **Quantum Software Engineer, TOKYO OFFICE, Tokyo, Japan**
 - > Core-algorithm and matrix library development for a web based quantum simulator back-end.
 - > Developed front-end user manual <https://www.elyah.io/documentation>.
 - > Quantum algorithm research in graph coloring and unstructured search.

Rust Python HTML Linux git Atom
- 9/2018 - 9/2019** | Krell Institute | **Computational Science Graduate Fellow, DOE, New York, USA**
 - > Conducted computational physics research on core-collapse supernovae using HPC.
 - > Code comparisons for nuclear reaction network optimization.
 - > Graduate coursework in Computer Science (Computer Architecture, Parallel Programming).

Python Fortran C OpenMP OpenACC HPC Linux git
- 5/2014 - 1/2019** | Los Alamos National Laboratory | **Student Researcher, T-CNLS, New Mexico, USA**
 - > Code development and testing of nuclear reaction network framework.
 - > Alteration of existing and legacy codes.
 - > Data analysis for paper preparation.

Fortran Python HPC MPI
- 5/2013 - 5/2014** | Los Alamos National Laboratory | **Student Researcher, C-NR, New Mexico, USA**
 - > Literature review on chemical condensation during planet formation .
 - > Design of numerical model for applications in post detonation nuclear forensics.
 - > Prepared academic report for the division.

Matlab Literature Review Radiochemistry Planetary Astrophysics

CONFERENCES, COLLABORATION MEETINGS, AND SUMMERSCHOOLS

INTERNATIONAL HIGH PERFORMANCE COMPUTING SUMMER SCHOOL, KOBE, JAPAN

2019

 <https://ss19.iuhpcss.org/>

Attended lectures on HPC concepts and applications. Participated in hands-on learning sessions on Open ACC and Machine Learning. Presented research related to HPC to peers and mentors in a virtual poster session.

HPC Open ACC Machine Learning

AMERICAN ASTRONOMICAL SOCIETY 229TH MEETING

2017

 <https://aas.org/meetings/aas229>

Attended talks and participated in poster session for work entitled *The Nucleosynthetic Yields of Core-Collapse Supernovae*.

Poster Presentation Supernovae

NUGRID COLLABORATION MEETINGS

2015-2017

 <https://nugrid.github.io/>

Participated in the development and testing of a parallel nuclear network framework to post process spherically symmetric yields from core-collapse supernovae.

Code Testing Nucleosynthesis

PUBLICATIONS

- 2019 **Andrews, S.**, Fryer, C., Even, W., Jones, S., Pignatari, M., Heger, A. Uncertainty in Explosive Yields of Core-Collapse Supernovae and the Next Generation of Gamma-Ray Telescopes. *ApJ* 890, 35.
- 2017 Fryer, C., **Andrews, S.**, Even, W., Heger, A., Safi-Harb, S. Parameterizing the Supernova Engine and its Effects on Remnants and Basic Yields. *ApJ* 856, 63.

HONORS AND AWARDS

- 2018 United States Department of Energy **Computational Science Graduate Fellowship** (CSGF)
- 2016 Sigma Pi Sigma Physics Honor Society
- 2014 New Mexico Tech Scholar
- 2013 New Mexico Institute of Mining and Technology Honors Student (all semesters in attendance)
- 2013 Phi Theta Kappa International Honor Society and Scholarship

OUTREACH AND VOLUNTEERING

- 2019 Amateur Observers Society of New York Guest Speaker
- 2019 Stony Brook University Astronomy Open Night Speaker
- 2015 New Mexico Science Olympiad Meteorology Event Supervisor
- 2014 New Mexico State Science Fair Junior Physics and Astronomy Judge

TEACHING AND MENTORING

- 8/2017 - 5/2018 **Stony Brook University | Graduate Teaching Assistant, PHYSICS AND ASTRONOMY DEPARTMENT,**
- Assisted in the instruction of PHYS 517 : Observational Techniques in Astronomy
 - Assisted students in astronomy lab with use of telescope, CCD, etc. and graded lab reports.
 - Assisted in the instruction of AST 203 : Astronomy
 - Lead recitation sessions, proctored exams, graded assignments and exams, and held office hours
 - Created course material such as python tutorials
- Python Teaching Telescopes Grading
- 8/2016 - 5/2017 **New Mexico Institute of Mining and Technology | Teaching Assistant, PHYSICS DEPARTMENT,**
- Assisted in the instruction of PHYS 241 & 242 Computational Mechanics I & II
 - Lectured for review sessions and proctored exams
 - Assisted students in python computational lab exercises
 - Graded assignments and lab reports
- Python Teaching Grading