BASSEL FARHAT

SKILLS

Python	3+ yrs
Linux	2+ yrs
Git	2+ yrs
HPC	2+ yrs
FORTRAN	1+ yrs

CONTACT

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PROFILE

Astrophysicist with strong theoretical background and a passion for coding.

Specialized in running magnetohydrodynamic simulations and in physical interpretation and statistical analysis of data, experienced with coding in multiple languages most notable Python.

WORK EXPERIENCE

Research project under the supervision of Prof. Dr. Robi Banerjee 03/20 - 07/20

Performing Initial simulations for the thesis

Gained skills: Running numerical simulations on a remote cluster.

Tasks:

- Ran numerical simulations on HPC cluster
- Studied the changes in different initial conditions on the runs

Master thesis under the supervision of Prof. Dr. Robi Banerjee 07/20 - 08/21

Density Perturbation from Primordial Magnetic Fields

Gained skills: Performing simulations using the MHD code : Flash.

Outcome: Two papers to be published in 2021

Tasks:

- Ran and maintained numerical simulations on multiple HPC cluster
- Studied in depth the evolution of all the physical parameters across different cosmological regimes
- Studied the evolution, strengths and distribution of density fluctuations
- Plotted the output of the simulations using Python libraries

Student Assistant 04/20 - 08/21

Introduction to Astronomy

Tasks:

- Aided in multiple courses for 3 semesters
- Acted as intermediary between the students and the course supervisors
- Monitored the grades using Excel spreadsheets

LANGUAGES

Arabic native

French bilingual

English advanced

German advanced

CERTIFICATES

- Python for Data Science and Machine Learning Bootcamp
- Machine Learning with Python
- Responsive Web Design

EDUCATION

M. Sc. Physics. 2021
Universität Hamburg

Main thematic priority of the master studies was Astrophysics with main interest on the theoretical studies of stellar evolution and star formation. Besides stellar studies, I also enjoyed studying experimental courses such as applications of general relativity and astro-particle physics.

The topic of my master thesis was density perturbations in primordial magnetic fields. I performed 3D magnetohydrodynamic simulations to find out the upper limits on density fluctuations and to monitor heating during different cosmological epochs.

B. Sc. Physics. 2017
Lebanese University, Fanar, Lebanon

Program covered a vaste range of general Physics and coding using technologies such as C and Matlab.

Main intersets lied in nuclear physics and thermodynamics.

ADDITIONAL SKILLS

Online Courses

I stay up to date with the fast evolving coding languages by taking online courses. For physics I read online journals such as MNRAS and the Astrophysical journal in addition to the online studies.

Leadership

Class representative during Bachelors

- Acted as intermediary between the students and the administration
- Provided the necessary resources and documents for the class

REFERENCES

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