Saeed Sarpas

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✣ Personal Information:
Place of Birth: Karaj, Iran
Date of Birth: 22 May 1989
Nationality: Iranian

✣ Language Skills:
Persian: Native, English: Fluent, German: Basic (A1)

● Academic Qualification

Master of Science (M.Sc.) in Astrophysics
Argelander-Institut für Astronomie, University of Bonn, Germany

Since Oct 2014

Accepted for Master of Science (M.Sc.) in Physics, Complex systems
Shahid Beheshti University, Tehran, Iran
I left this program after one semester to join the M.Sc. in Astrophysics at University of Bonn.

Oct 2013 — Mar 2014

Bachelor of Science (B.Sc.) in Physics
Shahid Beheshti University, Tehran, Iran

Oct 2008 — Aug 2013

Pre-university Degree in Mathematics and Physics
Shahid Soltani (NODET) high school, Karaj, Iran

Jun 2007

Summer School of National Olympiad in Astronomy and Astrophysics
Young Scholar Club (YSC), Tehran, Iran
Only 24 out of more than 6000 participants were accepted.

Jun — Aug 2005

Passed NODET high school entrance exam
National Organization For Development of Exceptional Talents
Only 16 out of more than 8000 participants were accepted.

Aug 2003

● Master Thesis

Discreteness effects in N-body simulations of cosmological structure formation
Argelander-Institut für Astronomie, University of Bonn, Germany
Supervisor: Prof. Dr. Cristiano Porciani

ECD: Mar 2017

Cosmological N-body simulations compute the gravitational interactions between discrete particles instead of solving the Vlasov-Poisson equation. This discreteness might lead to some nonphysical consequences (e.g. generation of spurious structures, noisy force calculation, regular fragmentation).
Our approach to studying these effects is,
1. generate different initial conditions (IC) by varying the number of particles at fixed power spectrum,
2. run N-body simulations using generated ICs,
3. find matching halos between different simulations,
4. study the statistical properties of the halos along the history of the simulations.

● Internship

A C code to the matter power spectrum

Argelander-Institut für Astronomie, University of Bonn, Germany   Nov 2015 — Feb 2016

Supervisor: Prof. Dr. Cristiano Porciani

A modular C code for calculating the matter power spectrum of a given field, extendable to calculate bi-spectrum. For developing this code, I used Test-Driven Development (TDD) which makes the programmer confident of the code accuracy by writing tests before implementation.

● Talks

A C code to the Matter Power Spectrum

Argelander-Institut für Astronomie, University of Bonn, Germany   29 Feb 2016

Discreteness Effects in Cosmological N-Body Simulations

ETH Zürich, Institute for Astronomy, Switzerland   30 Jan 2017

Discreteness Effects in Cosmological N-Body Simulations

Argelander-Institut für Astronomie, University of Bonn, Germany   30 Jan 2017

● Professional Experience

Teaching Assistant (Argelander-Institut für Astronomie, University of Bonn, Germany)   Apr — Sep 2016

Organized tutorial classes and solved problems for graduate-level course Astrophysics of Galaxies

Teaching Assistant (Argelander-Institut für Astronomie, University of Bonn, Germany)   Oct 2015 — Mar 2016

Organized tutorial classes, solved problems and evaluated tests for graduate-level course Cosmology

● Technical Experience

Simulation of gravitational N-body systems fully implemented on graphics processing units with CUDA C

Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran   Apr 2012

Presented in the 16th annual meeting on research in Astronomy

● Bachelor Thesis

Simulating star clusters with NBODY6

Shahid Beheshti University, Tehran, Iran   Apr 2013

Supervisor: Assoc. Prof. Dr. Sadegh Movahed

In this project, in addition to running sample simulations using NBODY6, we studied different numerical methods for solving linear differential equations suitable for direct N-body simulations.

● Technical Skills

Programming Skills

Expert in C, Python, JavaScript, Shell script

Advanced in C++, Java, Ruby, PHP, Clojure and parallel programming using CUDA C, OpenMp and MPI

Familiar with Fortran, Scheme, Lisp, ML

Web Development

Expert in AngularJS, Ruby on Rails, Node.js (familiar with react, om, meteor)

Advanced knowledge in relational database design, SQL, NoSQL

Theoretical Computer Science

Skilled in algorithm, data structure, various programming paradigms, test/behavior-driven development and continues integration

● Work Experience

Web Developer (Appcube GbR, Bonn, Germany)
Using web development technologies, such as AngularJS, Node.js and Java EE, as a part-time employee my task was to develop and maintain a few mobile and desktop applications.

Apr 2015 — Aug 2016

Web Developer (Kelasi non-profit organization, Karaj, Iran)
Developing an information management social network, inspired by version control ideas.

Apr 2013 — Apr 2015

Astrophysics Olympiad Teacher (NODET high schools, Iran)
Teaching different Astrophysics topics to talented high school students to prepare them for the International Olympiad on Astronomy and Astrophysics (IOAA)

2005 — 2014

● Honors & Awards

Silver medal of the 1st national olympiad on Astronomy and Astrophysics
Young Scholar Club (YSC), Tehran, Iran

Aug 2005

Awarded the annual grant for the elite university students from INEF
Iran's National Elites Foundation

Oct 2008 — Oct 2009

Member of INEF
Iran's National Elites Foundation

Since 2008

● Workshops & Conferences

8th Bethe Center Workshop: Particle Physics Meets Cosmology (Physikzentrum Bad Honnef, Germany)

10 — 14 Oct 2016

BCGS Weekend Seminars (Physikzentrum Bad Honnef, Germany)

22 — 24 Apr 2016

BCGS Weekend Seminars (Physikzentrum Bad Honnef, Germany)

17 — 19 Apr 2015

High Performance Computing, HPC5 (Institute for Research in Fundamental Sciences, IPM, Tehran, Iran)

12 — 18 Feb 2013

Cloud Computing (Institute for Research in Fundamental Sciences, IPM, Tehran, Iran)

1 — 2 Mar 2012

Thinking in GPU (Institute for Research in Fundamental Sciences, IPM, Tehran, Iran)

11 — 12 Jul 2011

GPU Programming (Institute for Research in Fundamental Sciences, IPM, Tehran, Iran)

27 May 2010