Dr. Onur Çatmabacak

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Date of birth: 29.06.1987, Turkey
Visa: B (Don't need sponsorship and will apply to C permit soon)

Professional Summary

Detail-oriented and results-driven **software developer** with 3 years of industry experience in product development. I have been a **Linux** enthusiast since 2008. Proficient in **bash** and **python** programming languages. Throughout my career, I have successfully developed and deployed commercial software that finds the minimum 2D surfaces to support a 3D object for additive manufacturing.
I am experienced in **agile methodologies**, having worked in fast-paced environments where I consistently delivered projects on time and within budget. I am skilled at translating business requirements into technical specifications and possess strong problem-solving abilities to overcome complex development challenges. Furthermore, I am committed to writing clean, maintainable, and well-documented code, following best practices and industry standards. I continuously stay updated with emerging technologies and tools to enhance my development skills and stay at the forefront of innovation.
As a software developer, I am driven by a constant desire to learn, grow, and take on new challenges. I am confident that my technical expertise, combined with my problem-solving skills and dedication, make me a valuable asset to your team.

Experience

System Engineer Nov. 2023 - Present
Bank of Julius Baer *Zurich, CH*

- Deployed data onboarding of several applications around the bank for Splunk, Cribl and Kubernetes sources.

Software Engineer Nov. 2021 – Jan. 2023
Spherene AG *Zurich, CH*

- Replaced pymesh library with trimesh and many other various mesh libraries since the software license is not suitable for closed source applications and updated the python version of the whole application from 3.8.8 to 3.10.7. As a result, we did not pay +50k CHF for software licenses.
- Developed features, e.g. http1 to http2 upgrade and , for the back-end of our online service for additive manufacturing.
- Created a jupyter notebook utilizing the proprietary software developed by Spherene AG, running in a docker container on Google Cloud for an ESA project.
- Created projects running our closed-source additive manufacturing software on Google Cloud for the web service.
- Integrated FEniCS FEM Solver instead of NGSolve into our proprietary software.
- Replaced many packages with inconvenient software licenses for closed-source applications.
- Improved numerical algorithm of our closed-source additive manufacturing software.

PhD Researcher Sep. 2016 – Dec. 2020
Institute for Computational Science, University of Zurich *Zurich, CH*

- Developed a pipeline using Python to analyze large datasets of state-of-the-art cosmological simulations of the Universe from FIRE (Feedback In Realistic Environments) project that were run in various supercomputing centers (CSCS, XSEDE, BSC-CNS, Flatiron Institute, etc...) around the World.
- Proposed a theoretical model to explain the black hole - galaxy mass scaling relation.
- Created galaxy catalogs using Amiga Halo Finder (AHF), which is used by many other researchers around the world.
- Supervised our research group in IT, software development in Python/C/C++, and data analysis.
- The list of scientific papers produced in this Ph.D. can be found **IN THIS LINK**.

Supervised Projects

Institute for Computational Science, University of Zurich — *Zurich, CH*

- Artem Basyrov, Theoretical modeling of halo accretion, Master of Science Thesis Project, Feb. 2019 – May 2019
- Eric Rohr, The galaxy–halo size relation at cosmic noon, Think Swiss Summer Exchange Student Project, June 2019 – Sep. 2019

Teaching Assistant — Sep. 2016 – Feb. 2020

Institute for Computational Sciences, University of Zurich — *Zurich, CH*

- Teaching assistant for Theoretical Astrophysics, The Universe, Computational Astrophysics, Introduction to Data Science, Introduction to Computer Simulations courses.
- Responsible for problem-solving sections and correcting/grading weekly home-works.

Teaching Assistant — Sep. 2014 – June 2016

Faculty of Engineering and Natural Sciences, Sabanci University — *Istanbul, TR*

- Teaching assistant for Nature of Science course with $\sim$ 750 students.
- Responsible for solving sessions and grading exams.

Education

University of Zurich — Zurich, CH

Ph.D. in Computational Astrophysics — *Sep. 2016 – Oct. 2022*

Thesis Title: The growth of supermassive black holes and their host galaxies in cosmological simulations.

Kültür University — Istanbul, TR

M.Sc. in Physics, GPA:3.45 — *Sep. 2011 – June 2014*

Thesis Title: Accretion disks around weakly magnetized neutron star low–mass x–ray binaries.

Kültür University — Istanbul, TR

B.Sc. in Physics with Honours, GPA:3.69 — *Sep. 2007 – June 2011*

Thesis Title: Radial dependent one-dimensional analytical solution of viscous accretion disks around neutron star low–mass x–ray binaries.

Skills

Languages: Turkish (Native), English (C1), German (B1)
Coding: Python ●●●●◐, Django ●●○○○, BASH ●●●●◐, FORTRAN95 ●●●○○, C/C++ ●●●○○, Julia ●●○○○
Dev Ops: Google Cloud ●●●○○, Docker ●●●●◐, Git ●●●●○
Misc: Software License ●●●◐○ Linux ●●●●●

(**Grading:** Beginner ● Familiar ●● Intermediate ●●● Comfortable ●●●●○ Expert ●●●●●)

Awards and Scholarships

- Second place in the "Sabanci University Academic Year Teaching Assistant Awards" — 2016
- Full Merit Scholarship for Doctoral Studies, Sabanci University — 2014 – 2016
- Full Merit Scholarship for Master Studies, Kültür University — 2011 – 2014
- Full Merit Scholarship for Bachelor Studies, Kültür University — 2007 – 2011
- Full Merit Scholarship for Bachelor Studies, Yeditepe University — 2004 – 2007

Workshops & Conferences

- Effective High-Performance Computing & Data Analytics with GPUs, Swiss National Supercomputer Centre (CSCS), Lugano/Switzerland, 15–25 July 2019
- Machine Learning for High Energy Physics - a mini course, , Physics Institute, University of Zurich, Zurich/Switzerland, 4-5 Feb. 2019.
- Scientific Programming with Python, Physics Institute, University of Zurich, Zurich/Switzerland, 25-29 June 2018.
- Directives Based GPU Programming, Swiss National Supercomputer Centre (CSCS), Lugano/Switzerland, 14-15 May 2018.
- AIM week, Academia Industrial Modelling week, ETH Zurich, Zurich/Switzerland, 7-11 Nov. 2016.