Jean-Claude Passy, Ph.D.

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Summary

Scientist, Research Software Engineer, and DevOps with 10+ years of experience:

- Education in both engineering and academic research
- Expertise in industrial software development, computer science, and physics
- Numerous articles in specialized and general press
- Management of mid-size teams of international researchers and software developers
- Adaptability, leadership, initiative, problem solving, synthesis skills

Employment

07/2018 – present — **Max-Planck-Institut für Intelligente Systeme, Tübingen, Germany**
Leader of the Software Workshop.
Additional tasks:
- Managerial duties: recruitment, budget management
- Maintenance of software infrastructure, DevOps and IT tasks
- Supervision and mentoring of students

02/2017 – 06/2018 — **Max-Planck-Institut für Intelligente Systeme, Tübingen, Germany**
Resarch Software Engineer at the Software Workshop.
- Development and deployment of optimized software solutions
- Collaboration with research groups on internal and external projects
- Trainings, hackathons to teach good software development practices

02/2013 – 01/2017 — **Argelander-Institut für Astronomie, University of Bonn, Germany**
Postdoctoral researcher in the Stellar Astrophysics group.
- Developed a state-of-the-art gravity solver for 3D AMR CFD code
- Managed a comparison study involving several multi-physics codes
- Created an HDF5 framework for flexible and optimized data outputs

09/2009 – 01/2017 — **Teaching experience (undergraduate and graduate level)**
Fluid dynamics, stellar physics, nucleosynthesis, astronomy.

Education

2009 – 2013 — **American Museum of Natural History, New York, USA**
University of Victoria, British Columbia, Canada
Ph.D. in astrophysics. Link.
Title: *Modeling Close Stellar Interactions Using Numerical and Analytical Techniques.*
- Developed various numerical codes (CFD, multi-physics, visualization)
- Produced and analyzed several HPC simulations using supercomputers
- Member of a team studying the numerical resolution of fluid instabilities

2007 – 2009	**University of Orsay, France**
	M.Sc. in physics and astrophysics with honours.
2005 – 2008	**Ecole Nationale Supérieure de Techniques Avancées, Paris, France**
	Engineer diploma (equivalent to M.Sc.). Specialization in fluid dynamics.

Awards and Grants

2014 – 2016	**Alexander-von-Humboldt Stipendium für Postdoktoranden**
	Prestigious two-year fellowship granted to conduct personal research.
2013	**Rodger Doxsey Prize, American Astronomical Society**
	Among the 10/200 best theses presented at the 221st AAS meeting.
2011–2014	**WestGrid, Compute Canada**
	Granted time and storage space on Compute Canada clusters.

Skills

Scientific	**Computer science**: algorithmic, numerics, software development
	Physics: fluid dynamics, astrophysics
	Mathematics: linear algebra, ODE/PDE solvers
Computing	**Languages**: Python, C++, Matlab, Fortran, HTML, JavaScript, Bash
	Libraries: Django, Dash, Flask, Cython, Boost, Qt, MPI/OpenMP, HDF5
	Frameworks: Ansible, Docker, Jupyter, LaTeX
	Tools: Git, Agile methodology, Confluence, Jira, Bamboo, Crucible, Crowd
	Platforms: Linux, mac OS, Windows
	Fields: Numerical methods, CFD, data analysis, data visualization
Personal	Critical thinking, leadership, reliability, self-motivation, empathy
Languages	French (native speaker), English (fluent), German (C1)

Publications

Computer Science	Specialized: 3 publications, 1 patent. MPI link.
Astrophysics	Specialized: 30 publications, 883 citations, h-index: 15. ADS link.
	General: articles in Scientific American and LeMonde.fr, interview for Science & Vie.

Memberships

| Collaborations | Memmo consortium, NuGrid collaboration. |
| Societies | Alexander von Humboldt Stiftung, Max Planck Society, de-RSE Society. |

Other Activities

Works Council	Member of the Works Council (Betriebsrat) since 2018. Second deputy since 2022.
Reviewer	Referee for the ANR and specialized reviews (ApJ, A&A, MNRAS).
Hobbies	Tennis, basketball, piano, Legos.