MAX BRAUN

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Namborner str. 29⋄ 66649 Oberthal, Germany
LinkedIn - GitHub

CORE SKILLS

- Complex analyses within different fields and efficient problem solving.
- Systems engineering and management of complex projects.
- Adapting quickly and easily to new environments and diverse teams.
- Working effectively under pressure and delivering products on time.

EXPERIENCE

European Space Agency 2017 - 2019
Systems Engineer *ESTEC/Noordwijk, The Netherlands*

· Systems engineering support for the lunar exploration projects with emphasis on GNC, mission analysis and propulsion.
· Industrial procurement support and management (incl. ITT support, ongoing study support, preparation and execution of progress meetings and reviews)
· Participation in various CDF studies as engineering support in the areas of propulsion and GNC.
· Engineering software development (i.a. mission analysis, requirement management).
· Management of system budgets, requirements and standards supporting the lunar programme.
· Architecture and mission analysis with focus on planetary exploration scenarios.
· Coordinating international cooperation on a technical level and outreach.

ArianeGroup, former Airbus Defence and Space 2015
Internship *Ottobrunn, Germany*

· Flow simulations in the field of rocket thrust chamber design with special regards to film cooling effects and advanced modelling techniques for hypergolic propellants.
· Sensitivity analysis to improve injection modelling in Computational Fluid Dynamics simulations using an Euler-Lagrange module and code development to improve the mentioned modelling approach.
· Code development to streamline post-processing of numerical simulations.

Department of Propulsion Systems, Technical University Munich 2014
Student Employee *Munich Germany*

· Supporting the workshop "FEM for thermal turbo-machinery engineering". Teaching vibrational analysis of rotating parts using the finite element method and complexity reduction methods of computational models with minimal the loss of precision.

MTU Aero Engines 2013
Internship *Munich Germany*

· Engineering support in the field of civil aircraft engine maintenance.

EDUCATION

Imperial College London, UK 2015/2016

Master Thesis: "Next Generation Mars Entry Vehicles: A Study of Entry, Descent and Landing Strategies for High Payload Mass Missions to Mars." Flight dynamics and guidance code development to simulate guided entry and descend manoeuvres.Analysis of advanced entry, descend and landing strategies for planetary exploration.
· GPA: 4.0

Technical University Munich, Germany March 2016
M.S in Aerospace Engineering

· Focus on systems engineering for space applications, propulsion systems design, computational fluid dynamics and flight dynamics
· Passed with distinction, Overall GPA: 3.9

Technical University Munich, Germany March 2013
B.S in Aerospace Engineering

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TECHNICAL STRENGTHS

Operating Systems	Windows, MacOS, Linux
Office	MS Office including MSProject and MS Visio
CAD:	Catia, SolidWorks, Autodesk Inventor, FreeCAD
CFD:	Ansys CFX, OpenFoam, RocFlam
IDE:	MS Visual Studio, Eclipse
Programming (Less than 5000 lines):	C, python
Programming (Over 20.000 lines)	Java, C++
Version Control Management	Git, Gitlab, Github
Databases	MySQL, MariaDB
Tools	Matlab, Simulink, Scilab, GMAT, STK, Vim/Nano, Tecplot,Gnuplot, OpenGL, Vim/Nano, Git, UNIX shell script,

LANGUAGES

English (C2), German (native), Spanish (A2), French (A1)

PUBLICATIONS

(Submitted) "Human Lunar Return: An Analysis of Human Lunar Exploration Scenarios within the Upcoming Decade." May 2019
Acta Astronautica

M. Braun,N. Gollins, V. Trivino, S. Hosseini, R. Schonenborg, M. Landgraf

"Preparing Potential European Roles in the International Exploration of the Moon within the European Exploration Envelope Programme" October 2018
Conference Paper, International Aeronautical Congress

M. Landgraf, R. Schonenborg, S. Hosseini, M. Braun, G. Ortega, J. Grenouilleau, W. Carey, K. Nergaard, S. De Mey, H. Hiesinger, M. Picard, H. Sawada, N. Satoh, T. Morito, B. Hufenbach, A. Ferri, R. Buchwald, B. Patti

"Strategies to Utilise Advanced Heat Shield Technology for High-Payload Mars Atmospheric Entry Missions" March 2016
Acta Astronautica

M. Braun, P. Bruce, E. Levis

ADDITIONAL EXPERIENCE AND ACTIVITIES

Delegate for the IMPC Young Professionals Workshop, IAC May - October 2018

Participation in a workshop comprising young industry and agency professionals from America, Europe and Asia with the goal to develop project management methods within the international environment of the space business.

International Planetary Probe Workshop (IPPW) Scholarship June 2017

Oral presentation: Entry, Descent and Landing analysis methods to estimate and enhance payload mass capabilities of upcoming missions to Mars.

Open Source Descent/Ascent Mission Analysis Toolkit 2017 - ongoing

Bottom up development of an open source mission analysis software toolkit to analyse ascent/descent and landing manoeuvres on planetary bodies with/without atmosphere. Please visit the ongoing project here.

REFERENCES

Professional and academic references available upon request.