

Jakub Tkaczuk

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Summary

- Seven years of experience in cryogenics, R&D of scientific instruments, mechanical engineering, and physics
- Managed a small research team, coached and supervised fifty students
- Alumnus of two Horizon 2020 programs: Marie Skłodowska-Curie International Training Network EASITrain, and Work Program for Research and Innovation ROXANNE

Competences

Engineering Mechanical and thermal analysis, Object Oriented Programming with Python, SolidWorks

Soft skills Dedicated team member, effective communicator and adaptable manager; always willing to learn

Languages Advanced English, advanced French, basic German, native Polish

Experience

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| ETH Zürich , Senior Researcher | Zürich, CH |
| <ul style="list-style-type: none">• Managed biogas sensing project and a team of four research assistants developing bio-gas flow and composition sensors• Supervised and coached sixty students during their BSc and MSc theses in mechanical engineering and thermodynamics• Designed and equipped two mechanical workshops and a biological laboratory• Initiated open source hardware publications, all available on Github | Jun 2023 – Now |
| Idiap Research Institute , Postdoc | Martigny, CH |
| <ul style="list-style-type: none">• Trained and integrated multilingual speech recognition models for a custom-built platform for criminal investigators within the EU-funded ROXANNE project• Addressed customers needs: developed online speech recognition engines for Spanish telephone providers, took responsibility for solving problems in system integration | Jan 2022 – Jan 2023 |
| National Institute of Standards and Technology (NIST) , Visiting Researcher | Boulder, CO, USA |
| <ul style="list-style-type: none">• Collected and analyzed data for developing the equations of state for cryogenic mixtures• Assessed the feasibility of developing various types of equations of state for quantum mixtures | Jan 2019 – May 2019 |
| CEA Grenoble , Marie Skłodowska-Curie fellow in cryogenics | Grenoble, FR |
| <ul style="list-style-type: none">• Developed equations of state for cryogenic mixtures of helium, neon, and argon• Designed, procured, and assembled equipment for experimental test bench for the Joule-Thomson coefficient measurements for experimental verification of models | Mar 2018 – May 2021 |

Education

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| PhD Université Grenoble Alpes , Applied Physics | Mar 2018 – Dec 2021 |
| Thesis: Equations of state for the thermodynamic properties of cryogenic mixtures (link) | |
| MSc Warsaw University of Technology , Mechanical and Power Engineering | Oct 2012 – Oct 2015 |
| Thesis: Conceptual design of 1.6 K magnetic refrigerator for the Future Circular Collider (link) | |
| BSc Warsaw University of Technology , Mechanical and Power Engineering | Oct 2008 – Jun 2012 |
| Thesis: Analysis of GE10-1 gas turbine cooling system | |