



software-engineering-lead research/LLMs for a11y
& ECM (Enterprise Content Management) consulting and engineering

Jack Cody Heseltine

+43 664/965 3008

jack.heseltine@gmail.com

Linz, AT

In planning (available spring 2025)

I am now at the start of my paper-writing academic career stage.

Published Academic Work

ICCHP (INTERNATIONAL CONFERENCE ON COMPUTERS HELPING PEOPLE WITH SPECIAL NEEDS) YOUNG RESEARCHERS' CONSORTIUM 2026 (PREPRINT ACCOMPANYING MASTERS-THESIS), LINZ, AT/BRNO, CZ

This **paper** is accompanies current Masters-thesis work on making documents accessible

WOLFRAM RESEARCH 2023 WOLFRAM SUMMER SCHOOL (PROCEEDINGS), BOSTON, MA

My community post was awarded a featured contributor badge & subsequently published

Other Publications

STARTING A UNIVERSITY: IT:U X ARS ELECTRONICA FOUNDING LAB (BOOK), LINZ, AT - 2024

Vision Statement (p. 71) about learning from US liberal arts colleges re: interdisciplinarity

DER STANDARD: IDSA: EINE UNIVERSITÄT BEGINNT (A UNIVERSITY STARTS), LINZ, AT - AUGUST 2023

OÖN: ARS ELECTRONICA FESTIVAL 2023 COMPANION PIECE ABOUT IDSA (IT:U), LINZ, AT - AUGUST 2023

Hosted Talks (Local Initiative at KHG, the Linz Catholic University Association)

KATH. HOCHSCHULGEMEINSCHAFT/-JUGEND (CATH. UNIV.-SOCIETY/YOUTH) W/ NEURON.AI, LINZ, AT

- **AI/Technical Talks & Workshops** (w/ Neuron AI & IT:U) - **Web Apps 1/2/3** (Delivered Talks/Workshops), **Sex in Linz** (Theater Visit + Director-Discussion - History/Aspects of Sex Labor in Linz), Confirmed: **MQTT/Dynamic Projections/VR** (Will Host Xmas Workshop w/ IT:U), In Planning: **AI Current Topics** (Will Host/Invited Talk w/ Neuron AI)
- **Extracurricular Talks**: Confirmed: **Queer Church** (Invited Talk), In Planning: **Neuroinformatics** (Will Host/Invited Talk)

Professional Discussion Circle Participation/Professional Development

WOLFRAM RESEARCH BIWEEKLY MEETING SERIES USING LLMS, REMOTE/CHAMPAIGN, IL - APRIL 2024+

With the upcoming wolfram.ai and LLM Assistant products, Mathematica is being supplied with RAG-guided LLM capabilities. The (PhD/+ level) researchers on the project host a Software-oriented discussion circle I actively participate in: **my ambition for my PhD work is to unlock similar professional frontiers**, at WR or elsewhere.

Organizing and Activism: Concept, Network/Organizing, Petition and Website

POSTUNI 2024, LINZ, AT: CATHOLIC-UNIVERSITY-YOUTH-LEAD, IN PARTNERSHIP W/ OTHER COLLECTIVES

From idea to finding partners and making the initiative visible in an appealing, mobile-friendly and accessible website, I am **spearheading an action to make the physical architecture of the new university an urban transformation project** - in the name of urban agency - rather than reassigning unused land (this was a previous, successful, petition) or suburban area, a current climate political hot-topic in Linz and Upper Austria w/ social implications: the main strategy is to build pressure on mayoral candidates in the 2025 election, petition pending.

Formal Teaching Positions

WOLFRAM RESEARCH, SUMMER RESEARCH PROGRAM MENTOR, BOSTON, MA - JULY-AUGUST 2024

After being a student myself in the Wolfram Summer School (for adults) in 2023, I am grateful for the opportunity to mentor some great highschoolers for their project work

Research Positions

WOLFRAM RESEARCH, CONSULTANT SOFTWARE ENGINEER, REMOTE/CHAMPAIGN, IL - JANUARY 2024+

I was hired by way of Wolfram Summer School ('23) participation and my thesis work in SE

- Took charge of visible Storage Monitoring (project) with real business impact for Cloud
 - Successfully maintained the Wolfram Language/Java-based ticket quota for consultants
- JKU LIFT/LIT/IT:U (SUMMER SCHOOL), RESEARCHER, LINZ, AT - MAY-SEPTEMBER 2024**

Collaboration w/ both Linz Institute of Techn. Center for Transf. and IT:U centred on impact

- Successfully applied for funding at 10K EUR volume to explore applications for my thesis
- ARS ELECTRONICA/IDSA, RESEARCHER/FOUNDER, LINZ, AT - AUGUST-SEPTEMBER 2023**

Project-based research in the real world, exhibit at Ars Electronica Festival, publicity work

Current Degree Work

JOHANNES KEPLER UNIVERSITY, INSTITUTE OF MACHINE LEARNING, LINZ, AT - 2022-25 (ANTICIPATED)

MSc Artificial Intelligence, Reasoning and Knowledge Representation (Symbolic AI)

First AI curriculum in Austria, coursework-focus of educational leave Oct '22-Sept '23: detailed curriculum (Symbolic AI Elective Track); I see it as the theoretical extension of my studies in SE, at Inst. of ML under Hochreiter.

Recent Hackathons

- **Mistral x a16z London 2024:**

see PDFStral Outcome

+ Practical Work connection to my studies in AI at JKU: paper and repo available (FAW GmbH industry research partnership)

+ (Selective, Master/PhD-Level) Summer Schools Student (and **Mentor**) Participation

- IT:U Interdisciplinary Digital Innovation Summer School '24 (Linz, AT)
- Wolfram Summer Research Program (**Mentor**) '24 (Boston, USA)
- University of Bern Winter School in Reinforcement Learning '24 (Mürren, CH)
- Wolfram Summer School '23 (Boston, USA)



Hosted Talks

< Current

I was part of the founding cohort for a new university for Austria.

- IDSA, Institute for Digital Science Austria, later IT:U, Interdisciplinary Transformation University

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Thank you for your consideration. Please see also <https://heseltime.github.io/>

++ Thesis-Work (BScEng. Hagenb.)

- With RISC, Research Institute Symbolic Computation, and FH Upper Austria/ Campus Hagenberg, **available online: Mathematical Document Processing**

+ Major Research Project +++++

- With LIFT/LIT and FH Upper Austria/ Campus Hagenberg/ FAW GmbH: **Making Documents Accessible Research Thesis/ ECM Module/ Platform** -

supported by 10K EUR in research money through employment (**rx**)

- Public **Prototype 1: pdfstral.london**
- **Practical Work/ Prototype 2: hoffman** (project)
- Related blog post + langchain work: **Knowledge Graph from Text, or Explainability for Understanding Argumentation** (presentation/ report, project in GitHub Classroom) - **blog post will reproduce**, linking stage 2 in early December for discussion with IT:U this app round

in progress, > anticipated completion date early 2025

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Further Application Materials that Should Accompany this Resume

Please find my professional resume, LinkedIn/GitHub presence, and the following recommendations at your disposal or otherwise available at your request!

- Recommender Current Masters-Thesis: [Univ. Prof. Küng](#) (Deputy Head FAW, submitted w/ priority)
- Recommender BScEng-Thesis: [Assoc. Univ. Prof. Windsteiger](#) (submitted with priority)
- Academic recommendations from college (2) and summer schools (1) available
 - Academic advisor/Literature Professor (Professor of Global Studies and Joseph Campbell Chair in the Humanities + I studied at SLC because of Campbell, my academic hero): [Prof Una Chung](#)
 - Senior Thesis/Portfolio Supervisor/Barbara B. and Bertram J. Cohn Professorship in Environmental Studies: [Prof. Charles Zerner](#)
- Professional Recommendation: Red Cross Upper Austria - **Drs. Federsel and Niklas**/HR Red Cross (submitted as prof. recommendation with priority) Linz
- Personal Recommendation/Statement of Character: **Mag. Sarah Emberger**, Pastoral/KHG Linz

Academic Background: I completed my college degree (BA) at **Sarah Lawrence College (SLC)**, a leading liberal arts college in NY (US), and am on schedule to obtain a second BScEng from Fachhochschule Upper Austria/Campus Hagenberg (AT) in Software Engineering where current work with Wolfram Research also counts as the practical requirement for degree completion. BA-Diploma and Transcripts available/submitted separately, as well as BScEng Progress-Transcripts.

Applicant's Note: For my PhD applications, I am applying to the "**Broad AI**" initiative (symbolic + subsymbolic AI) at **Johannes Kepler** as well as the new IT-U's "**Computational X**" impact-oriented programs in Linz, in addition to int'l (US-based) programs where I believe I would be a good fit in the '24/25 cycle.

Since I am applying before completion of my Master's degree, I understand I am applying for conditional acceptance, especially in AT/EU where the Masters degree is required for PhD program entry, or as determined by the application target institution.

++ (University-) VOLUNTEERING

- **President**
Catholic
University-Youth
'24 onwards
- **Vice-President**
Traktor Sports
Group '23-'24
- **Choir + Theater**
Group Member

Personal website

reflection piece

on my life at KHG,
the catholic society
at my university.

