

Bich Ngoc (Rubi) Doan

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WORK EXPERIENCE

Research Assistant

Mar 2026 – Present

Swiss AI Initiatives

Lausanne, Switzerland

- Developing a **multilingual, culturally-aware synthetic data pipeline** for **LLM fine-tuning**, with a focus on generating culturally grounded personas across diverse linguistic communities for conversational data generation

Visiting Researcher

Oct 2025 – Feb 2026

Social AI Studio @SUTD, Microsoft Research and GovTech

Singapore

- Built **large-scale evaluation pipelines** to audit demographic bias in LLM-based resume screening under anonymisation, in collaboration with GovTech
- Generated 4,100 controlled resume variants with sociocultural marker injection to isolate job-irrelevant bias effects, and evaluated 18 LLMs across realistic hiring workflows
- Contributed to a Microsoft Research collaboration on **cultural alignment of AI agents**, supporting a dynamic routing framework with cultural adapters and a multimodal dataset grounded in Southeast Asian norms

Research Assistant

Sep 2023 - Sep 2024

Collaborative Social Technologies Lab @KAIST

Daejeon, South Korea

- Designed and developed a **Node.js Discord chatbot** that bridges real-world restorative justice principles to online communities through structured apology workflows
- Conducted qualitative study with community moderators, including **in-the-wild deployment** and **interviews**
- Applied **inductive thematic analysis** to identify opportunities, constraints, and value-dependent contexts for restorative justice in online moderation
- Key Results:** First author of CHI 2025 paper and second author of CSCW 2025 paper

Research Assistant

Jan 2022 - Jun 2022

Collaborative Distributed Systems & Networks Lab @KAIST

Daejeon, South Korea

- Led the development and implementation of OctoFedS, a **federated split learning system** for **edge object detection**, integrating YOLOv3 model to achieve 92% mean average precision compared to centralized training
- Conducted extensive experiments and performance analysis to optimize system efficiency and explore practical use cases for federated learning in edge environments
- Key Results:** First author of published research and presenter of poster at KCC 2022

EDUCATION

EPFL

Sep 2024 - Present

M.S., Digital Humanities (School of Computer and Communication Sciences)

Lausanne, Switzerland

- GPA:** 5.57/6.0
- Relevant Coursework:** Natural Language Processing, Applied Data Analysis, Computational Social Media

KAIST

Sep 2019 - Aug 2024

B.S., Computer Science with a double major in Business-Technology Management

Daejeon, South Korea

- GPA:** 3.63/4.3
- Relevant Coursework:** Machine Learning, Computer Vision, Human-AI Interaction, Social Computing

University of Twente

Feb 2021 - Jun 2021

Exchange, Creative Technology

Enschede, Netherlands

- Relevant Coursework:** Data Visualization and Physicalization, Database Management

PUBLICATIONS

The Design Space for Online Restorative Justice Tools: A Case Study with ApoloBot [\[doi\]](#)

ACM CHI 2025 | **Bich Ngoc Doan**, Joseph Seering

Mapping Community Appeals Systems: Lessons for Community-led Moderation in Multi-Level Governance [\[doi\]](#)

ACM CSCW 2025 | Juhoon Lee, **Bich Ngoc Doan**, Jonghyun Jee, Joseph Seering

OctoFedS: A Federated Split Learning System for Object Detection at the Edge [\[doi\]](#)

Korea Computer Congress (KCC) 2022 | **Bich Ngoc Doan**, Thanh Tung Nguyen, Dongman Lee

SKILLS

- **Programming:** Python, JavaScript (Node.js, React), Ruby, C, HTML/CSS
- **AI/ML:** PyTorch, TensorFlow, scikit-learn, prompt engineering, LLM fine-tuning, RAG
- **Data Analysis & Visualization:** pandas, NumPy, SciPy, Tableau
- **System:** Bot development, federated learning
- **Communication:** Stakeholder interviews, cross-team collaboration, research publication
- **Language:** Vietnamese (Native), English (Fluent), Korean (Intermediate), French (Beginner)

SELECTED COURSE PROJECTS

Beyond the Rabbit Hole: Mapping the Relational Harms of QAnon Radicalization [\[preprint\]](#)

Spring 2025, Semester Project @dlab

- Designed a **large-scale computational pipeline** to analyze the relational harms of QAnon radicalization using 12,700+ first-person narratives from Reddit
- Developed data-driven “radicalization personas” via **contextual topic modeling (BERTopic)** and **mixed-membership modeling (LDA-inspired)**, capturing distinct trajectories of belief adoption
- Applied **LLM-assisted annotation** and **regression analysis** to link radicalization trajectories with specific emotional harms in families and close relationships

QwenSTEM: Fine-tuning Small Language Models for STEM Education [\[report\]](#)

Spring 2025, Modern Natural Language Processing

- Fine-tuned a lightweight (0.6B) LLM for university-level **STEM multiple-choice question answering** using advanced optimization techniques including **DPO, quantization, and RAG**
- Achieved higher accuracy than reasoning-based baselines while reducing inference memory usage by up to ~70%, enabling efficient deployment for educational applications

Framing Deception: Analyzing Narratives of Political Deepfakes [\[report\]](#)

Spring 2025, Computational Social Media

- Conducted a large-scale multimodal analysis of **976 political deepfake incidents**, examining narrative framing, emotional cues, and dissemination patterns
- Developed a **narrative typology** of political deepfakes using a multimodal pipeline, combining textual topic modeling with visual emotion recognition and symbol detection
- Modeled content engagement and virality using **regression and network analysis**