

Jessica Maria Echterhoff

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Experience

Machine Learning Research Scientist Intern APPLE INC., CUPERTINO, USA	01/2024–06/2024
Developed knowledge distillation fine-tuning leading to 40% less performance degradation when updating LLMs continuously	
Machine Learning and Data Science Intern MICROSOFT INC., REDMOND, USA	06/2023–09/2023
Developed Bayesian optimization based automated tabular data analysis evaluate hypothetical scenarios	
Machine Learning Research Intern APPLE INC., CUPERTINO, USA	06/2022–09/2022
Automated human data annotation tasks leading to up to 100% reduction of annotation volume using models-in-the-annotation-loop	
Machine Learning Research Intern APPLE INC., HEIDELBERG, GERMANY	07/2021–12/2021
Provided a model-in-the-loop data annotation approach to optimize human annotations leading to 30% cost reduction	
Software Engineer SIDEKICK INTERACTIVE INC., MONTRÉAL, CANADA	02/2019–08/2019
Built, maintained and tested 8 native iOS and 5 native Android applications for 5 different customers	
Software Engineer FREELANCER, CHILE	12/2018–01/2019
Leading iOS developer for implementation, maintenance and testing of an iOS application for a German learning-transfer startup	
Software Engineer EVERSILL GMBH MUNICH, GERMANY	06/2017–08/2018
Developed, maintained and tested functional and technical components of an iOS learning-transfer application	
Advising Developer BARKAWI MANAGEMENT CONSULTANTS GMBH & Co. KG MUNICH, GERMANY	05/2016–01/2017
Coordinated the implementation of the user interface redesign for an American agricultural machinery manufacturer by leading the front-end development and customer validation process	
Web Developer LENDICO DEUTSCHLAND GMBH BERLIN, GERMANY	03/2015–07/2015
Built a search engine optimized landing page by leading a 3-people student development team	

Education

Doctor of Philosophy in Computer Science UNIVERSITY OF CALIFORNIA, SAN DIEGO, USA	04/2022–ongoing
Research on human and data centric machine learning; GPA: 3.6/4.0; Expected graduation in 2025	
Master of Science in Machine Learning UNIVERSITY OF CALIFORNIA, SAN DIEGO, USA	09/2019–03/2022
Specialization in applied machine learning; Research in human centered computing; GPA: 3.44/4.0	
Exchange Semester Information Technology ÉCOLE DE TECHNOLOGIE SUPÉRIEURE MONTRÉAL, CANADA	09/2018–12/2018
Specialization in machine learning and software engineering (French program); GPA: 3.73/4.3	
Bachelor of Science in Informatics TECHNICAL UNIVERSITY MUNICH, GERMANY	04/2016–03/2019
Minor in business administration; Thesis: "Gait and Jump Classification in Equestrian Sports"; GPA: 2.2/1.0 (lower is better)	
Bachelor of Science in Management and Technology TECHNICAL UNIVERSITY MUNICH, GERMANY	10/2013–09/2016
Minor in informatics and finance; Thesis: "CSR Reporting and Capital Market Reactions"; GPA: 2.5/1.0 (lower is better)	
Exchange Semester Intensive Chinese Language Course ZHEJIANG UNIVERSITY HANGZHOU, CHINA	09/2015–12/2015
Studies of Chinese culture and language in an intensive intercultural program	

Skills

Languages GERMAN (NATIVE), ENGLISH (C2), FRENCH (B2), MANDARIN (HSK1), SPANISH (A1)
Programming PYTHON, PYTORCH (<i>PROFICIENT</i>), SQL, C++, JAVASCRIPT, SWIFT, HTML/CSS, MATLAB (<i>COMPETENT</i>), JAVA, KOTLIN, TENSORFLOW, O-CAML, OBJECTIVE-C, C (<i>FAMILIAR</i>)

Scholarships and Fellowships

Apple Scholars in AI/ML PhD Fellowship	2023–2025
Women in Machine Learning Scholarship to attend ICLR VIRTUAL	2021
Graduate Women in Computing Scholarship to attend Grace Hopper Celebration VIRTUAL	2020
UCSD Electrical and Computer Engineering Fellowship (56,000US\$)	2019–2020
ACM-W Scholarship to present at Ubicomp/ISWC SINGAPORE	2018
ACM Scholarship to Attend Summer School ISRAEL	2018
Selected to attend a fully funded summer school for social signal processing, displays and interaction with smart environments	
Entrepreneurial Research Scholarship TSINGHUA UNIVERSITY BEIJING/TECHNICAL UNIVERSITY MUNICH	2017
Selected as part of a high-potential team to attend a fully funded exchange program to expand business ideas in China	

Projects and Prizes

Internship work was selected as a poster APPLE DATA SCIENCE AND MACHINE LEARNING SUMMIT	2021–2022
Graduate Student Service Award UNIVERSITY OF CALIFORNIA, SAN DIEGO, USA	2020
Awarded for helping prospective students connect to potential advisors	
Winning Team TechFest Hackathon and Osram/Adidas Challenge MUNICH, GERMANY	2016
Developed a smart cycling jacket to prevent accidents in traffic (297 participants)	
3rd Place Startup Weekend HANGZHOU, CHINA	2015
Developed an iOS application to connect athletes in China (50 participants)	

Service and Professional Engagement

Invited Talks APPLE ('24); TSMC ('24); MICROSOFT ('24); STANFORD ('24)

Reviewing ACM WEBCONF ('21,'23,'24); UBIComp/ISWC CONFERENCE ('20); IEEE JBHI ('19)

Volunteering UBIComp/ISWC ('20); ICML ('20); ACI CONFERENCE ('18); WEB SUMMIT ('17)

Community Mentoring UCSD GRAD WOMEN IN COMPUTING ('21); UCSD ECE GRADPAL ('21,'22)

Research Mentoring ABEER ALESSA; SUJEN KANCHERLA; ADITYA MELKOTE (@UCSD); YAO LIU (NOW @CMU); PURVA KOTHARI (NOW @APPLE); DIVJA DERVALA (NOW @SONY); HEKET MEHTA (NOW @AERIES)

Teaching

Neural Networks/Pattern Recognition; Recommender Systems; Big Data Analysis UC SAN DIEGO 2022

Object-Oriented Programming; Rapid Software and Hardware Design UC SAN DIEGO 2021

Advanced Topics in Software Engineering UC SAN DIEGO 2020

Publications

MUSCLE: A Model Update Strategy for Compatible LLM Evolution 2024

Jessica Echterhoff, Fartash Faghri, Raviteja Vemulapalli, Ting-Yao Hu, Chun-Liang Li, Oncel Tuzel, Hadi Pouransari
2024 Conference on Empirical Methods in Natural Language Processing (EMNLP Findings)

Cognitive Bias in High Stakes Decision-Making with LLMs 2024

Jessica Echterhoff, Yao Liu, Abeer Alessa, Julian McAuley and Zexue He
2024 Conference on Empirical Methods in Natural Language Processing (EMNLP Findings)

Avoiding Decision Fatigue in Recommendation with AI-Assisted Decision-Making 2024

Jessica Echterhoff, Aditya Melkote, Sujen Kanherla and Julian McAuley
2024 ACM Conference on User Modeling, Adaptation and Personalization (UMAP)

Augmenting Tele-Postpartum Care With Vision-Based Detection of Breastfeeding-Related Conditions 2024

Jessica De Souza, Varun Viswanath, Jessica Echterhoff, Kristina Chamberlain, Edward Jay Wang
Journal of Medical Internet Research AI

Are Automatic Evaluations Consistent with User Studies? 2024

Haozhe Xu, Zhankui He, Jessica Echterhoff, Xiaoqing Zheng, Julian McAuley
Under Submission

PDB-Eval: Evaluating Multimodal Models for Description and Explanation of Personalized Driving Behavior 2024

Junda Wu, Jessica Echterhoff, An Yan, Kyungtae Han, Amr Abdelraouf, Rohit Gupta, Julian McAuley
Under Submission

Evaluating Large Language Models as Generative User Simulators for Conversational Recommendation 2024

Se-eun Yoon, Zhankui He, Jessica Echterhoff, and Julian McAuley
2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)

Driving through the Concept Gridlock: Unraveling Explainability Bottlenecks in Automated Driving 2024

Jessica Echterhoff, An Yan, Kyungtae Han, Rohit Gupta, Amr Abdelraouf and Julian McAuley
2024 Winter Conference on Applications in Computer Vision (WACV)

Should you make your decisions on a WhIM? Data-Driven Decision making using a What-If Machine 2023

Jessica Echterhoff, Bhaskar Sen, Yifei Ren, Nikhil Gopal
arXiv:2309.17364

Comparing Comparisons: Generating Aspect-Aware Comparative Sentences 2023

Jessica Echterhoff and Julian McAuley
arXiv:2307.03691

AI-Moderated Decision Making: Capturing and Balancing Anchoring Bias in Sequential Decision Tasks 2022

Jessica Echterhoff, Martin Yarmand, and Julian McAuley
Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems

SpecTracle: Wearable Facial Motion Tracking from Unobstructing Peripheral Cameras 2021

Yinan Xuan, Varun Viswanath, Sunny Chu, Owen Bartolf, Jessica Echterhoff and Edward J. Wang
arXiv:2308.07502

PAR: Personal Activity Radius Camera View for Contextual Sensing 2020

Jessica Echterhoff and Edward J. Wang
arXiv:2008.07204

Gait Analysis in Horse Sports 2018

Jessica Echterhoff, Juan Haladjian and Bernd Brügge
Proceedings of the Fifth ACM International Conference on Animal-Computer Interaction 2018

Gait and Jump Classification in Modern Equestrian Sports 2018

Jessica Echterhoff, Juan Haladjian and Bernd Brügge
Proceedings of the 2018 ACM International Symposium on Wearable Computers (ISWC)