Anamaria Crisan, PhD

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I have over 10 years of experience translating machine learning (ML) research into products and policy-making within industry, government, and academia. My track record includes award-winning publications at top-tier conferences of the ACM (CHI, FAccT) and IEEE (TVCG, CG&A) in addition to biomedical journals (Nature, Oxford Bioinformatics, PLOS). I serve on the organizing and program committees of the IEEE Vis and ACM CHI conferences. My goals are to help people make informed and trustworthy decisions with data and in partnership with AI/ML systems. My research has been cited nearly 5,000 times, my h-index is 19 and my i-10 index is 28.

Current Position

Aug 2024 - **Assistant Professor**, University of Waterloo
Cheriton School of Computer Science

Education

2015 - 2019 **PhD Computer Science**, University of British Columbia
Thesis: Visualizing Heterogenous Data in Genomic Epidemiology
Supervisors: Dr. Tamara Munzner and Dr. Jennifer L. Gardy
Committee: Dr. Raymond Ng and Dr. Bonnie Henry
Notable Awards: Vanier CGS-D and UBC Public Scholar

2008 - 2010 **MSc Bioinformatics**, University of British Columbia
Thesis: Mutation Discovery in Regions of Segmental Cancer Genome Amplifications from Next Generation Sequencing of Tumours
Supervisors: Dr. Sohrab Shah and Dr. Samuel Aparicio
Notable Awards: CIHR-MSFHR Bioinformatics Trainee Award

2004 - 2008 **BSc Computer Science**, Queen's University at Kingston
Specialization: Biomedical Computing
Honours Thesis: Genomics of Autism
Honours Thesis Supervisor: Dr. Hagit Shatkay
Notable Awards: NSERC USRA, CRA-W Distributed Mentorship Trainee Award

Research Work Experience

2019 - 2024 **Lead Research Scientist, Tableau Research**
Seattle, Washington, USA

- I developed strategic research directions for human-ML/AI collaboration, including technical approaches and best practice toward responsible use of ML/AI
- I lead research projects in partnership with cross-functional engineering and product teams to inform, influence, and support ML/AI product strategy
- I contributed to the Tableau Main (`Overcoming Misinformation`, `Data Science Reflection`) and Engineering Blog Sites (`Interactive Machine Learning`, `AutoML and People`)

2013 - 2015 **Bioinformatician, British Columbia Centre for Disease Control**
Vancouver, British Columbia, CANADA

- Lead cutting edge research to integrate new genomic technology and machine learning into public health applications in British Columbia
- Collaborated with international partners to establish standards for clinical genomic reporting in infectious diseases

2010 - 2013 **Bioinformatician, Decipher Biosciences**
Vancouver, British Columbia, CANADA

- Start-up (then GenomeDx Biosciences) where I was employee 3, grew it up to 100 people, and which sold in 2021 $600 million valuation.
- I was the co-inventor of the flagship product : a genomic classifier that predicts metastatic prostate cancer post-surgery. This product is used in clinics today.
- Participated in early funding rounds to raise over $10 million

Awards

2024	IEEE Computer Graphics and Applications - Best Paper Runner-up
2024	ACM CHI'24 HEAL Workshop - Highlight Presentation
2023	ACM CHI'23 - Best Paper Honorable Mention
2021	ACM CHI'21 - Best Paper Honorable Mention
2021	Visualization in Data Science Symposium - Best Paper
2019	ABPHM Conference Software Prize
2018	Li Tze Fong Memorial Fellowship ($25,000)
2018	UBC Public Scholar Award ($5,000)
2015	UBC Four Year Fellowship ($72,000)
2015	Vanier CGS-D ($150,000)

Students

Current: 1 PhD, 4 MMath, 1 URF/URA
Publications refer to those listed in the publications sections of this CV

Doctoral

Student	Duration	Project	Publications
Li (Felicia) Feng*	2024.09 -	Human-AI collaboration in Data Science	

**co-supervised with Dr. Jian Zhao*

Masters

Student	Duration	Project	Publications
Xinxin Yu	2024.09 -	AI-Supported Code Review and Refinement for Data Analysis and Visualization	
Sejal Agrawal	2025.09 -	TBD	
Maksym Bidnyi	2025.09 -	TBD	
Samiha Anuva	2025.09 -	TBD	

Undergraduate

Note: Undergraduate Research Fellowships (URFs) are intensive full-time research internships lasting 16 weeks. Undergraduate Research Assistantships (URAs) are part-time (5 hours/week) lasting 16 weeks.

Student	Duration	Program	Project	Publications
Lianghan (Austing) Dong	2025.01 - 2025.09	URF URA	Personalized Explainations of Data Visualizations	ArXiv 2025

Graduate Supervisory Committees

Doctoral thesis committee membership is a multi-year commitment that encompasses, but is not limited to, annual meetings, proposal defense, thesis review, and final thesis defense. Masters (MMath) committee membership is shorter in duration (a few weeks) and includes reading and approving the thesis and attending the thesis presentation.

Student	Program	Duration	Supervisor	Institution
Gabriela Morgenshtern	PhD	2025.01 -	Jurgen Bernard	University of Zurich
Zibo (Selena) Zhang	MMath	2025.07	Jian Zhao	University of Waterloo
Yuanhong (Allen) Zhang	MMath	2025.08	Anita Layton	University of Waterloo
Ansh Sharma	MMath	2025.08	Jim Wallace	University of Waterloo

Courses

Click on the course title to go the syllabus and other course content

Session	Course	Level	Class Size*	Title	Eval. (/5)**
S25	CS449/649	Undergraduate & Graduate	107	Human Computer Interaction	TBD
W25	CS889	Graduate	23	Interfaces for Human-AI Interaction	4.7

**maximum allowed course size for graduate class at UWaterloo is 24*

***based upon the overall student course perception (scp) scores*

Funding

Award	Role	Year	Funder	Amount	Title
Discovery Grant	PI	2025.03.21	NSERC	$210,000	Visualization Interfaces and Techniques for Human-AI Collaboration in Data-Driven Decision Making
Discovery Launch Supplement	PI	2025.03.21	NSERC	$12,500	Visualization Interfaces and Techniques for Human-AI Collaboration in Data-Driven Decision Making
Start-up Grant	PI	2024.09.01	UWaterloo	$150,000	-

The following organizations have also provided compute credits through researcher access programs: Google ($5000 USD), Cohere ($2000 CAD), and OpenAI ($1000 USD).

Publications

I primarily publish in competitive top-tier venues of Human Computer Interaction (HCI) and Information Visualizations (Vis), with acceptance rates around 25% and stringent two rounds of peer review. These include, the ACM Conference on Human Factors in Computing Systems (CHI), ACM Conference on Fairness, Accountability, and Transparency (FAccT), and IEEE Trans. on Visualization and Computer Graphs (TVCG, also associated with the IEEE Vis conference). I also submit my research to competitive workshops, with at least one peer-review round, appearing at top-tier conferences (e.g., VIS, CHI, NeurIPs). Earlier in my career (prior to 2019) I published predominately in bioinformatics and medical science journals with high impact factors (e.g., Nature, Oxford Bioinformatics).

A full publication list with updated citation counts are available on my `Google Scholar profile`

Note: § indicates joint authorship; † indicates senior author position; underline indicates my students work
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Pre-prints (Under Review)

ArXiv 2025 — Dong L., **Crisan A.**, *Probing the Visualization Literacy of Vision Language Models: the Good, the Bad, and the Ugly.* Currently Under Review
10.48550/arXiv.2504.05445 Video HuggingFace

Published

TiiS 2025 — Hong M., **Crisan A.**, *Data has Entered the Chat: How Data Workers Conduct Exploratory Visual Analytic Conversations with GenAI Agents.* ACM Transactions on Interactive Intelligent Systems (TiiS)
10.1145/3744750

CUI 2025 — Abolnejadian M., Amirshahi S, Brehmer M., Crisan A.,*AInsight: Augmenting Expert Decision-Making with On-the-Fly Insights Grounded in Historical Data.* Proc. of CUI'25
10.1145/3719160.3737633

CHI EA'25 — **Crisan A.**, McNutt A. *Linting is People! Exploring the Potential of Human Computation as a Sociotechnical Linter of Data Visualizations.* alt.CHI
10.1145/3706599.3716230

VIS'24 — Gathani, S., **Crisan A.**, Setlur, V, Srinivasan A.,*GROOT: A System for Editing and Configuring Automated Data Insights.* IEEE Visualization Conference (Short Paper)
10.1109/VIS55277.2024.00015

TVCG 2024 — Srinivasan A.,Purich J., Correll M., Battle L., Setlur V., **Crisan A.**†,*From Dashboard Zoo to Census: A Case Study with Tableau Public.*IEEE Transactions on Visualization and Computer Graphics
10.1109/TVCG.2024.3490259

TVCG 2023 — **Crisan A.**, Shang M., Brochu ER., *Eliciting Model Steering Interactions from Users via Data and Visual Design Probes.* IEEE Transactions on Visualization and Computer Graphics
10.1109/TVCG.2023.3322898

CHI 2023 🏆 — Rogers J., **Crisan A.** *Tracing and Visualizing Human-ML/AI Collaborative Processes through Artifacts of Data Work.* Proc. of CHI'23
10.1145/3544548.358081
Best Paper Honorable Mention - CHI'23

CG&A 2023 🏆 — Tory M., Bartram L., Fiore-Gartland B., **Crisan, A.**, *Finding Their Data Voice: Practices and Challenges of Dashboard Users.* IEEE Computer Graphics and Applications
10.1109/MCG.2021.3136545 GC&A Preview Tableau Engineering Blog
Best Paper Runner Up

AJPH 2022 — **Crisan A.** *The Importance of Data Visualization in Combating a Pandemic.* The American Journal of Public Health
10.2105/AJPH.2022.306857

FAccT 2022 — **Crisan A.**§, Drouhard M.§, Vig J, Ranjani, N., *Interactive Model Cards: Human Centered Approach to Model Documentation.* Proc. FAccT'22
10.1145/3531146.3533108 FAccT'22 Video Streamlit Application

TVCG 2021

Crisan A, Fisher, S, Gardy, JL, Munzner T., *GEViTRec: Data reconnaissance through recommendation using a domain-specific visualization prevalence design space.* IEEE Transaction on Visualization and Computer Graphics
10.1109/TVCG.2021.3107749 VIS'22 Video Tableau Engineering Blog
Winner - ABPHM'19 Software Prize

CHI 2021

Crisan A, Fiore-Gartland, B., *Fits and Starts: Enterprise use of AutoML and the role of humans in the loop.* Proc. of CHI'21
10.1145/3411764.3445775 CHI'21 Video Tablaeu Engineering Blog
Best Paper Honorable Mention - CHI'21

CHI 2021

Crisan A, Correll M.,*User ex Machina: Simulation as a design probe in human in the loop text analytics.* Proc. of CHI'21
10.1145/3411764.3445425 CHI'21 Video Tableau Engineering Blog

TVCG 2021

Crisan A., Fiore-Gartland, B., Tory, M. *Passing the data baton: A retrospective analysis on Data Science work and workers.* IEEE Transactions on Visualization and Computer Graphics
10.1109/TVCG.2020.3030340 VDS'21 Video Tableau Main Blog
Best Paper at the Visualization in Data Science Symposium

CHI 2020

McNutt, A. **Crisan A**, Correll, M. *Divining insights: Visual analytics through cartomancy* Proc. ACM CHI'20 – alt.CHI
10.1145/3334480.3381814

VIS 2019

Crisan A., Munzner T. *Uncovering data landscapes through data reconnaissance and task wrangling* IEEE Visualization Conference (Short Paper)
10.1109/VISUAL.2019.8933542

Bioinf. 2018

Crisan A., Gardy JL., Munzner T. *A systematic method for surveying data visualizations and its resulting Genomic Epidemiology Visualization Typology: GEViT* Oxford Bioinformatics
10.1093/bioinformatics/bty832

Bioinf. 2018

Crisan A., Munzner T., Gardy JL., *Adjutant: an R-based tool to support topic discovery for systematic and literature reviews* Oxford Bioinformatics
10.1093/bioinformatics/bty722 R Package

PeerJ 2018

Crisan A., McKee G., Munzner T., Gardy JL. *Evidence-based design and evaluation of a whole genome sequencing clinical report for the reference microbiology laboratory.* PeerJ
10.7717/peerj.4218

IDMM 2016

Miller RR., Langille MG., Montoya V., **Crisan A.**, Stefanovic A., Martin I., Hoang L., Patrick DM., Romney M., Tyrrell G., Jones SJ., Brinkman FS., Tang P., McKee G., Munzner T., Gardy JL. *Genomic analysis of a serotype 5 streptococcus pneumoniae outbreak in British Columbia, Canada, 2005 - 2009.* Canadian Journal of Infectious Diseases and Medical Microbiology
10.1155/2016/5381871

MGen 2016

Hatherell H., Didelot X., Pollock SL., Tang P., **Crisan A.**, Johnston JC., Colijn C., Gardy JL. *Declaring a tuberculosis outbreak over with genomic epidemiology.* Microbial Genomics
10.1099/mgen.0.000060

IJTLD 2015

Crisan A., Wong HY., Johnston JC., Tang P., Colijn C., Otterstatter M., Hiscoe L., Parker R., Pollock SL., Gardy JL. *Spatio-temporal analysis of tuberculous infection risk among clients of a homeless shelter during an outbreak.* International Journal of Tuberculosis and Lung Disease
10.5588/ijtld.14.0957

Eur Urol. 2015 Cooperberg MR., Davicioni E., **Crisan A.**, Jenkins RB., Ghadessi M., Karnes RJ. *Combined value of validated clinical and genomic risk stratification tools for predicting prostate cancer mortality in a high-risk prostatectomy cohort.* European Urology
10.1016/j.eururo.2014.05.039

BJUI 2014 **Crisan A.**§, Alshalalfa M.§ , Vergara IA., Ghadessi M., Buerki C., Erho N., Yousefi K., Sierocinski T., Haddad Z., Black PC., Karnes RJ., Jenkins RB., Davicioni E. *Clinical and genomic analysis of metastatic prostate cancer progression with a background of postoperative biochemical recurrence.* British Journal of Urology International
10.1111/bju.13013

PCPD 2016 Ross AE., Feng FY., Ghadessi M., Erho N., **Crisan A.**, Buerki C., Sundi D., Mitra AP., Vergara IA., Thompson DJ., Triche TJ., Davicioni E., Bergstralh EJ., Jenkins RB., Karnes RJ., Schaeffer EM. *A genomic classifier predicting metastatic disease progression in men with biochemical recurrence after prostatectomy.* Prostate Cancer and Prostatic Diseases
110.1038/pcan.2013.49

J Urol 2013 Karnes RJ., Bergstralh EJ., Davicioni E., Ghadessi M., Buerki C., Mitra AP., **Crisan A.**, Erho N., Vergara IA., Lam LL., Carlson R., Thompson DJ., Haddad Z., Zimmermann B., Sierocinski T., Triche TJ., Kollmeyer T., Ballman KV., Black PC., Klee GG., Jenkins RB. *Validation of a genomic classifier that predicts metastasis following radical prostatectomy in an at risk patient population.* Journal of Urology
10.1016/j.juro.2013.06.017

IJRO 2013 Feng FY., Ghadessi M., Davicioni E., **Crisan A.**, Erho N., Mitra AP., Triche TJ., Jenkins RB., Ross AE., Schaeffer EM. *Validation of a Genomic Classifier That Predicts Metastatic Disease Progression in Men With Biochemical Recurrence Post-Radical Prostatectomy.* International Journal of Radiation Oncology
10.1038/pcan.2013.49

PLOS 2013 **Crisan A.**§, Erho N.§, Vergara IA., Mitra AP., Ghadessi M., Buerki C., Bergstralh EJ., Kollmeyer T., Fink S., Haddad Z., Zimmermann B., Sierocinski T., Ballman KV., Triche TJ., Black PC., Karnes RJ., Klee G., Davicioni E., Jenkins RB., *Discovery and validation of a prostate cancer genomic classifier that predicts early metastasis following radical prostatectomy.* PLOS ONE
10.1371/journal.pone.0066855

Nature 2012 Shah SP., Roth A., Goya R., Oloumi A., Ha G., Zhao Y., Turashvili G., Ding J., .., **Crisan A.**, ... Marra MA., Aparicio S., *The clonal and mutational evolution spectrum of primary triple-negative breast cancers* Nature
10.1038/nature10933
I engineered a distributed analytic pipeline for this research

Bioinf. 2012 Roth A., Ding J., Morin R., **Crisan A.**, Ha G., Giuliany R., Bashashati A., Hirst M., Turashvili G., Oloumi A., Marra MA., Aparicio S., Shah SP. *JointSNVMix: a probabilistic model for accurate detection of somatic mutations in normal/tumour paired next-generation sequencing data.* Oxford Bioinformatics
10.1093/bioinformatics/bts053

Frontiers 2012 Vergara I., Erho N., Triche T., Ghadessi M., **Crisan A.**, Sierocinski T., Black PC., Buerki C., Davicioni E.. *Genomic dark matter in prostate cancer: exploring the clinical utility of ncRNA as biomarkers.* Frontiers in Genetics
10.3389/fgene.2012.00023

Bioinf. 2012 **Crisan A.**, Goya R., Ha G., Ding J., Prentice LM., Oloumi A., Senz J., Zeng T., Tse K., Delaney A., Marra MA., Huntsman DG., Hirst M., Aparicio S., Shah SP. *Mutation discovery in regions of segmental cancer genome amplifications with CoNAn-SNV: a mixture model for next generation sequencing of tumors.* PLOS ONE
10.1371/journal.pone.0041551

Bioinf. 2010 Goya R., Sun MG., Morin RD., Leung G., Ha G., Wiegand KC., Senz J., **Crisan A.**, Marra MA., Hirst M., Huntsman D., Murphy KP., Aparicio S., Shah SP. *SNVMix: predicting single nucleotide variants from next-generation sequencing of tumors.* Oxford Bioinformatics
bioinformatics/btq040

Workshop Publications

IEEE VIS 2024 **Crisan A.** *We Don't Know how to Assess LLM Contributions in VIS/HCI.* BELIV'24
10.1109/BELIV64461.2024.00018

IEEE VIS 2024 **Crisan A.**, Butters N., Zoe., *Exploring Subjective Notions of Explainability through Counterfactual Visualization of Sentiment Analysis.* BELIV'24
10.1109/BELIV64461.2024.00007

ACM CHI 2024 **Crisan A.**, Hoque, EP., *Towards a Holistic Evaluation of LLM Generated Code for Exploratory Visual Analysis.* HEAL'24

NeurIPs 2022 **Crisan, A.**, Kotthoff, L., Streit, M., Xu, K. *Towards a Human-Centered Approach for Automation in Data Science.* HCAI @ NeurIPs'22
https://tinyurl.com/3yv8y7vs

KDD 2021 **Crisan, A.**, Setlur V. *Natto: Rapid and Visual Iteration of Analytic Data Models with Intelligent Assistance.* VDS @ KDD'21
https://tinyurl.com/mr25p23c

IEEE VIS 2018 **Crisan A.**, Elliott M.*How to evaluate an evaluation study? Comparing and contrasting practices in vis with those of other disciplines.* BELIV'18
10.1109/BELIV.2018.8634420

IEEE VIS 2016 **Crisan A.**, Gardy JL., Munzner T., *On regulatory and organizational constraints in visualization design and evaluation.* BELIV'16
10.1145/2993901.2993911

Reports

2024 **Crisan A.**, Kotthoff L., Streit M., Xu, K. *Human-Centered Approaches for Provenance in Automated Data Science.* Dagstuhl Seminar 23372
10.4230/DagRep.13.9.116

Selected Presentations

Over the past six years I gave 7 invited talks, one of them as a keynote

Shonan 2024 Translating Visualization Research into Practice
Location: Shonan Village, Japan
Invited Talk

SCI 2024	Scaling Data Driven Decision-Making through Human-AI interaction *Location:* Salt Lake City, USA ***Invited Talk***
HILDA 2023	Scaling Data Driven Decision-Making through Human-AI interaction *Location:* Seattle, USA ***Invited Talk & Keynote***
FAccT 2022	Interactive Model Cards : a Human-Centered Approach to Model Documentation *Location:* Seoul, Korea
CHIL 2022	Are Log Scales Endemic Yet? Strategies for Visualizing Biomedical and Public Health Data *Location:* Virtual (due to COVID-19) ***Invited Talk***
VIZBI 2022	Visualization in Public Health *Location:* Virtual (due to COVID-19) ***Invited Talk***
CHI 2021	Fits and Starts: Enterprise Use of AutoML and the Role of Humans in the Loop *Vis ex Machina*: Simulation as a Design Probe in Human in the Loop Text Analytics *Location:* Virtual (due to COVID-19)
ABPHM 2019 🏆	Automated Visualization Recommendations for Genomic Epidemiology *Location:* Hinxton, UK ***Winner - ABPHM'19 Software Prize***
Dagstuhl 2019	Dagstuhl Seminar 18161 – BioVis Crossroads *Location:* Schloss Dagstuhl, Germany Organized by: Jan Aerts (KU Leuven, BEL); Nils Gehlenborg (Harvard University, USA);Elisabeta Marai (University of Illinois,USA); and Kay Nieselt (Uni. Tübingen, DEU) ***Invited Talk***
DBMI 2018	Creating Explorable Visualization Design Spaces: An Example from Infectious Disease Genomic Epidemiology *Location:* Boston, USA ***Invited Talk***

Service

Program Committees

2021 - present	IEEE VIS - Program Committee
2022 - present	ACM CHI - Associate Chair, Visualization Subcommittee
2023 - Present	ACM FAccT - Program Committee
2024	ACM CSCW - Program Committee
2023	NeurIPs AI4Science Workshop, Area Chair
2023	ACM CHI - Paper Awards Committee
2022	ISVC - Visualization Area Chair
2021 - 2023	VADA (Visual and Automated Disease Analytics) - Steering Committee
2020 - 2023	Frontiers in Bioinformatics- Review Editor
2017 - 2019	Bioinformatics Open Source Conference - Program Committee

Organizing Committees

2025	IEEE VIS - Area Curation Committee
2024 - 2025	IEEE VIS - Workshops Chair
2023 - 2024	IEEE VIS - Application Spotlights Chair

2021 - 2024	Visualization in Data Science Symposium - Papers co-chair
2021 - 2022	IEEE VIS - Vis in Practice co-chair
2018 - 2020	Biovis@IEEEVIS Chair
2016 - 2018	Biovis Website chair

Reviewing

2020- 2023	Frontiers in Bioinformatics
2019-	IEEE VIS
2019	ACM CHI
2018-	IEEE TVCG
2017-	Bioinformatics Open Source Conference

Leaves

Dec'22 - June'23	Parental Leave