

EDUCATION

- **Carnegie Mellon University, Pittsburgh, USA**
Doctor of Philosophy (Language and Information Technologies) *Fall 18 - 23*
Survival and Time-to-Event Analysis, Graphical Models, Mixed-Integer Non-Linear Programming
Committee : **Artur Dubrawski** (Chair), **Bhiksha Raj**, **Louis-Philippe Morency**,
Russell Greiner (University of Alberta) and **Katherine Heller** (Google and Duke University)
Master of Science (Language Technologies) *Fall 16 - 18*
Coursework : Advanced Natural Language Processing, Advanced Multimodal Machine Learning,
Neural Networks for Natural Language Processing, Machine Learning for Text Mining
- **Army Institute of Technology, University of Pune, India** *Fall 12 - 16*
Bachelor of Computer Engineering
First Position in Class, Chief of Army Staff Gold Medal in Academics

EXPERIENCE

- *Research Scientist, Google Research*, San Francisco *Spring 23 -*
Ensembles for Large Language Model Alignment,
Refinement, Safety and Evaluation for Medical Assistant (MedPalm),
Conversion Delay Modelling for Android App Ads,
Uncertainty estimation for ranking and relevance in YouTube.
- *Research Intern, Responsible AI, Google Research* (Remote due to COVID-19) *Spring 22*
Algorithmic Fairness in Integer Risk Scoring Systems.
- *Research Intern, Google Brain* (Remote due to COVID-19) *Summer 20*
Deep Semi-Parametric Mixtures for calibrated estimation of Time-to-Event.
- *Summer Associate, JP Morgan AI Research*, New York City *Summer 19*
Manager : Prof. **Manuela Veloso**, Dr. **Prashant Reddy**
Bayesian methods to mitigate systemic analyst bias and error in equities forecasts.
- *Science for Social Good Fellow, IBM TJ Watson Research Center*, New York *Summer 18*
Manager : Dr. **Kush R. Varshney**
Causal neural networks to recover heterogeneous treatment effects.

SOFTWARE

auton-survival : an Open-Source Package for Regression, Counterfactual Estimation, Evaluation and Phenotyping with Censored Time-to-Event Data. [\[Github Repository\]](#) [\[Docs\]](#) [\[Official Blog\]](#)

TEACHING

- CMU 10-708, Probabilistic Graphical Models** *Fall 20*
Teaching Assistant for Prof. **Pradeep Ravikumar**. [\[webpage\]](#)
- CMU 11-761, Language and Statistics** *Fall 19*
Teaching Assistant for Prof. **Bhiksha Raj**. [\[webpage\]](#)

PUBLICATIONS

- Pre-prints in Submission / Under Preparation**
1. "Helping or Herding? Reward Model Ensembles Mitigate but do not Eliminate Reward Hacking" [\[link\]](#)
Jacob Eisentstein, **Chirag Nagpal**, Alekh Agarwal, Jonathan Berant and others.
 2. "Reward Model Aggregation" [\[link\]](#)
Zihao Wang, **Chirag Nagpal**, Sanmi Koyejo and Victor Veitch.
 3. "Recovering Sparse and Interpretable Subgroups with Heterogeneous Treatment Effects with Censored Time-to-Event Outcomes" [\[link\]](#)
Chirag Nagpal, Vedant Sanil, and Artur Dubrawski.
 4. "Broadening the Time Horizon : Adaptive Risk Scores for Time-to-Event Prediction" [\[link\]](#)
Chirag Nagpal, Artur Dubrawski and Berk Ustun.
- Accepted Peer Reviewed Journal, Conference and Symposium Papers**
5. "Participatory Systems for Personalized Prediction" [\[link\]](#)
Hailey James, **Chirag Nagpal**, Katherine Heller, and Berk Ustun.
NeurIPS - Neural Information Processing Systems '23 (Spotlight Paper)
 6. "Counterfactual Phenotyping with Censored Time-to-Events" [\[arXiv\]](#) [\[code\]](#)
Chirag Nagpal, Mononito Goswami, Keith Dufendach, and Artur Dubrawski
KDD - ACM Conference on Knowledge Discovery and Data Mining '22

7. "auton-survival : an open-source package for Regression, Counterfactual Estimation, Evaluation and Phenotyping with Censored Time-to-Event Data" [\[arXiv\]](#) [\[code\]](#) [\[blog\]](#)
Chirag Nagpal, Willa Potosnak, and Artur Dubrawski
MLHC - Machine Learning for Healthcare Conference '22
8. "Deep Cox Mixtures for Survival Regression" [\[arXiv\]](#) [\[code\]](#)
Chirag Nagpal, Steve Yadlowsky, Negar Rostamzadeh, and Katherine Heller
MLHC - Machine Learning for Healthcare Conference '21
Taught in Prof. David Sontag's Machine Learning for Health course at MIT and Harvard. [\[link\]](#)
9. "Deep Survival Machines : Fully Parametric Survival Regression and Representation Learning for Censored Data with Competing Risks" [\[arXiv\]](#) [\[code\]](#)
Chirag Nagpal, Xinyu (Rachel) Li, and Artur Dubrawski
JBHI - IEEE Journal of Biomedical and Health Informatics '21
Spotlight Presentation at NeurIPS ML for Health Workshop '19, (Top 3% out of over 300 submissions.)
10. "Deep Parametric Time-to-Event Regression with Time-Varying Covariates" [\[arXiv\]](#) [\[code\]](#)
Chirag Nagpal*, Vincent Jeanselme*, and Artur Dubrawski
AAAI Spring Symposium - Survival Prediction : Algorithms, Challenges and Application '21
11. "Interpretable subgroup discovery in treatment effect estimation with application to opioid prescribing guidelines"
Chirag Nagpal, Dennis Wei, Bhanukiran Vinzamuri, Monica Shekhar, Sara E. Berger, Subhro Das, Kush R. Varshney
CHIL - Conference on Health, Inference and Learning '20 [\[arXiv\]](#) [\[code\]](#)
12. "Dynamically Personalized Detection of Hemorrhage"
Chirag Nagpal, Xinyu (Rachel) Li, Michael R. Pinsky and, Artur Dubrawski
MLHC - Machine Learning for Healthcare Conference '19 [\[arXiv\]](#)

Abstracts and Posters at Medical Conferences

13. ICCAI '22, "Identification of patients with stable coronary artery disease who benefit from ACE inhibitors using Cox mixture model for heterogeneous treatment effects"
Van H Le, Chirag Nagpal, and Artur Dubrawski
14. STS Coronary '22, "Novel Machine Learning Technique Defines Patients Who Benefit from Off-Pump CABG"
Keith Dufendach, Chirag Nagpal, Willa Potosnak, Artur Dubrawski, and David Kaczorowski
15. ISICEM '22, "Phenogrouping of hemorrhagic trauma patients using latent variable machine learning."
Chirag Nagpal and Artur Dubrawski
16. CCM '18, "Accuracy of identifying venous thromboembolism by administrative coding compared to manual review."
Tiffany Pellathy, Melissa Saul, Gilles Clermont, Chirag Nagpal, Artur Dubrawski, Michael Pinsky, and others.

MENTORING

Masters

- Fall '22 : **Shakirah Cooper**, Biomedical Engineering, Carnegie Mellon
- Fall '19 : **Xinyu (Rachel) Li**, Information Systems, Heinz College → Robotics PhD, Carnegie Mellon

Undergraduates

- Summer '22 : **Mingzhu Liu**, University of Michigan at Ann Arbor → Robotics MS, Carnegie Mellon
- Summer '22 : **Van H. Le**, Math and Economics, Hollins University, Virginia
- Fall '21 : **Willa Potosnak**, Biomedical Engineering, Duquesne University, PA → Robotics PhD, Carnegie Mellon

SERVICE

Organization

Co-organizer for the **AAAI Spring Symposium on Survival Prediction 2021, 2023**

Reviewer

Journals : IEEE Journal of Biomedical and Health Informatics, Journal of Forecasting, Frontiers in Immunology

Conferences : NeurIPS, ICML, ICLR, MLHC, CHIL, ML4H

Departmental Service

Member, **School of Computer Sciences Dean's PhD Students Advisory Committee** [\[webpage\]](#)

Member, Admissions Committee, **Robotics Institute Summer Scholar's Program**. [\[webpage\]](#)

Chair, **SCS DEC/5, CMU Computer Science Graduate Students Social Organization**. [\[webpage\]](#)

Member, **International Student's Association**, Carnegie Mellon. [\[webpage\]](#)

PERSONAL

Citizenship : Indian, **Languages** : English and Hindi

Interests : Equitation, Trivia Quizzing, Squash, Making and DIY, Amateur Radio Operator (Callsign : VU2CND)

REFERENCES

Prof. **Artur Dubrawski**, Chair Professor of Computer Science, Carnegie Mellon.

Prof. **Bhiksha Raj**, Professor of Computer Science, Carnegie Mellon.

Prof. **Berk Ustun**, Assistant Professor, University of California, San Diego.