What I accomplished in my four years of undergrad
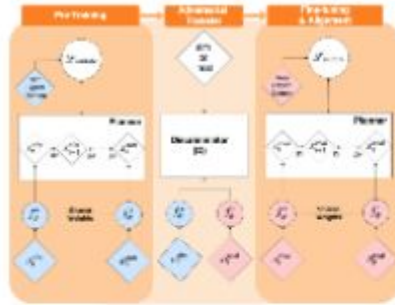
Homanga Bharadhwaj

Highlights

Research - I was able to successfully publish **9** peer-reviewed publications, most of which are in the top conferences of my field (AI/ML/HCI). Some of these publications were single-authored by me and others were co-authored with professors at IITK and in other universities.

Extracurriculars - I was an editor in the campus journalism body, Vox Populi for one year (2017-2018). I was also a student guide in the counseling service and responsible for mentoring my juniors. I play Table Tennis. I play Chess. I paint.
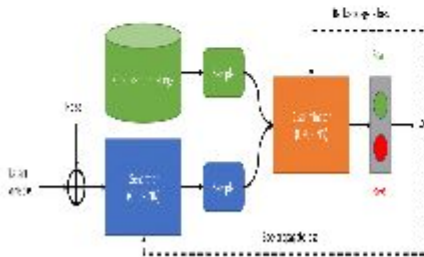
Research - Publications

A Data-Efficient Framework for Training and Sim-to-Real Transfer of Navigation Policies
Homanga Bharadhwaj, Zihan Wang, Yoshua Bengio, Liam Paull
ICRA, 2019

Adversarial domain adaptation can be used for training a gradient descent based planner in simulation and transferrring the learned model to a real navigation environment.
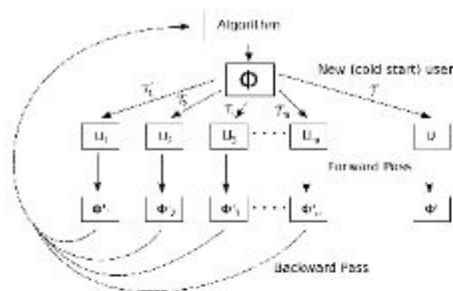

RecGAN: Recurrent Generative Adversarial Networks for Recommendation Systems
Homanga Bharadhwaj, Homin Park, Brian Y. Lim
RecSys, 2018

Recurrent Neural Network based Generative Adversarial Networks can learn to effectively model the latent preference trends of users in time-series recommendation.

Research - Publications

Meta-Learning for User Cold-Start Recommendation
Homanga Bharadhwaj
IJCNN, 2019

A Meta-Learning strategy can be used to develop a recommendation model that performs resonably good enough for a wide range of users and that can be cost-effectively updated during test time for a specific user
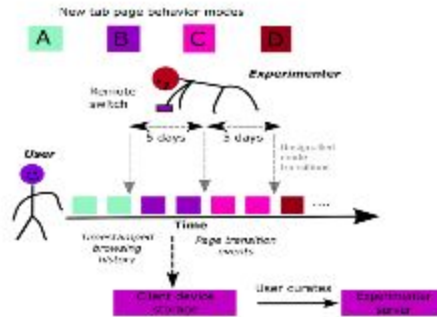

A Hierarchical Multi-Task Learning Framework for Healthy Drink Recognition
Homin Park, **Homanga Bharadhwaj**, Brian Y. Lim
IJCNN, 2019

A Hierarchical Multi-Task Learning model can leverage several auxiliary tasks like detection of container properties to overcome the limitation of insufficient visual cues for drinks, while predicting the healthiness of drinks from their images
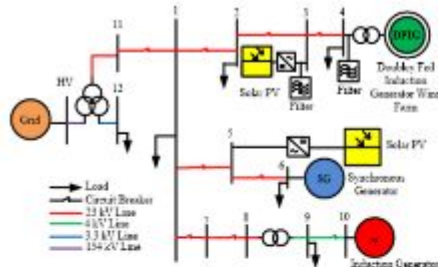
Research - Publications

New tab page recommendations cause a strong suppression of exploratory web browsing behaviors

Homanga Bharadhwaj, Nisheeth Srivastava

WebSci, 2019

Passive website recommendations embedded in the new tab displays of browsers (that recommend based on frecency) inhibit peoples' propensity to visit diverse information sources on the internet

Research - Publications

A Synchrophasor Assisted Optimal Features based Scheme for Fault Detection and Classification

Homanga Bharadhwaj Avinash Kumar Abheejeet Mohapatra

IJCNN, 2019

An optimal features' classifier developed using evolutinary heuristics can be used for real time fault detection and identification

Layer-wise Relevance Propagation for Explainable Recommendations

Homanga Bharadhwaj

EARS Workshop, SIGIR, 2018

Layer-wise relevance propagation can be used for explaaining the predictions of a convolutional neural network based recommendation model
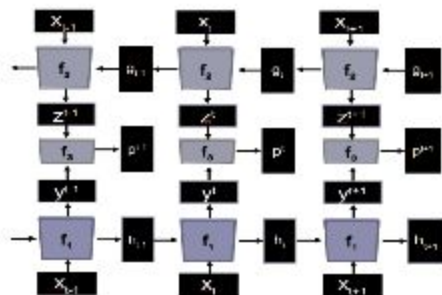
Research - Publications

Explanations for Temporal Recommendations
Homanga Bharadhwaj, Shruti Joshi
XAI Workshop, IJCAI, 2018

A neighborhood style explanation scheme can be used as an auxiliary mechanism for interpreting the predictions of a Recurrent Neural Network based temporal recommendation model

Layer-wise relevance propagation for explainable deep learning based speech recognition
Homanga Bharadhwaj,
ISSPIT, 2018

Layer-wise Relevance Propagation can used for explaining the predicitons of a Bi-directional Gated Recurrent Unit based speech recognition model

Courses

Served as a Teaching Assistant (TA) for the course Computational Cognitive Science (CS786) in the Spring offering of 2019

Served as a Project Mentor in the course Topics in Probabilistic Modeling and Inference (CS698X) in the Spring offering of 2019

Served as a Project Mentor in the course Introduction to Machine Learning in the Autumn offering of 2018

Extra-Curriculars

Served as an editor for one year year in the campus journalism body Vox Populi

Was involved in writing articles + editing for a total of two years

I was a co-author of three major articles -

- Theses OARS don't row
- Inside the Dhobi Ghats of IITK
- The Tragic Demise of Alok: Looking back to Move Ahead

Edited many other articles during my tenure

Extra-Curriculars

Served as a Student Guide (SG) in the Counselling Service

Helped mentor and guide first year students into adjusting to life at IITK and with prospering in academics and extracurriculars.

Was an active member of Chess Club, IITK and also played Table Tennis as part of 1st year CPA

I paint - oil on canvas, water color on handmade paper

The road ahead...

Msc/PhD in Machine Learning+Robotics in the Department of Computer Science at the University of Toronto!

Thank you!