Krishnapriya Vishnubhotla

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Research stream Masters student in the Computational Linguistics group at the University of Toronto. My main research area is **Natural Language Processing**. I am interested in developing techniques that can help machines interpret, understand and participate in human communication. I am currently supervised by **Prof. Graeme Hirst** of the **Department of Computer Science, University of Toronto**.

Education

- **University of Toronto** — **Toronto**
  Master of Science in Computer Science, Thesis option, GPA: 4.0/4.0 — *2017–Present*
- **National Institute of Technology Karnataka-Surathkal** — **Mangalore, India**
  B.Tech Computer Science and Engineering , CGPA 8.93/10 — *2013–2017*
- **K.V.I.I.Sc** — **Bangalore, India**
  Primary, Secondary and High School (Grades 1 to 12), 97% AISSCE — *2001–2013*

Experience

- **University of Toronto** — **Toronto**
  Research Assistant — *September 2017–Present*
  Computational Linguistics group. Supervisor: Graeme Hirst
- **University of Toronto** — **Toronto**
  Teaching Assistant — *September 2017–Present*
  Courses: CSC108: Introduction to Computer Programming; CSC309: Programming on the Web
- **Myntra Designs Pvt.Ltd.** — **Bangalore, India**
  Summer Intern — *May 2016 - July 2016*
  Developed a chatbot for the company that could answer customer queries on orders, refunds, offers etc.
- **Indian Institute of Technology, Bombay** — **Mumbai, India**
  Summer Research Intern, — *May 2015 - July 2015*
  Worked on characterizing the Nash equilibria of Rank-1 games.

Notable Projects

- **Masters Project (Ongoing):** *Natural Language Processing*
  - My current project is in the field of computational stylometry. Specifically, we are trying to characterize and analyze the dialogic style of different characters in literary texts. This involves applying probabilistic generative models of text to our dataset to identify different aspects influencing a character's style of speaking.
  - Previously worked on a project involving extracting aspects and their corresponding sentiments from reviews in the medical/health domain.

- **Learning Dicrete Latent Structure Course Project (January 2018-Present):** *'GANs for Text Generation using word2vec'*

  Developed a text generation model using Generative Adversarial Networks (GANs), with word2vec embeddings as the input and output of the system. This bypasses the problem of differentiating through a discrete space, i.e, words. Both the generator and the dicriminator were implemented as deep convolutional layers. A conditional variant of the model was also implemented. Ongoing work involves exploring conditional models further, along with LSTM variants of the generator.

- **Natural Language Computing Course Project (January 2018-April 2018):** *'Linguistic Properties of Languages in Multilingual Word Embeddings'*

  Explored how different linguistic properties of languages, such as morphology, language family, script etc, were captured by FastText word embeddings in a multilingual embedding space. An iterative alignment algorithm based on the morphological typology of languages was proposed.

- **B.Tech project (September 2016-April 2017):** *'Demography based recommender system for travel'*

  We built a recommender system for travel destinations based on traveller demography. Word embeddings along with hierarchical clustering were used to determine aspects of places that appealed most to different demographies. TripAdvisor was our primary source of information, coupled with selected travel blogs and WikiTravel.

- **Summer Industrial Internship Project (May 2016-July 2016):** *'A chatbot for customer service'*

  Part of a team at Myntra Designs Pvt Ltd, a fashion e-commerce firm, working on building a chatbot that could answer questions and perform tasks relating to customer orders, refunds, returns etc. It was also capable of other purpose tasks like small talk, fashion recommendations, deal alerts etc. We built upon APIs such as IBM Watson and the Microsoft Bot Framework.

Publications

- Jeblee S, Budhkar A, Milić S, Pinto J, Pou-Prom C, Vishnubhotla K, Hirst G, and Rudzicz F (2018). TorontoCL at the CLEF 2018 eHealth Challenge Task 1. CLEF 2018 Online Working Notes. CEUR-WS

Technical skills

- **Programming Languages:** Proficient in: C, C++, Python, Matlab, Javascript, Ruby, TeX, R
  Also basic ability with: Java.
- **Industry Software Skills:** Stanford CoreNLP, LATEX, MATLAB, Ruby on Rails

Other Achievements and Activities

- Selected for the **8th Lisbon Machine Learning School**, held from June 14 2018 to June 21 2018 at the Instituto Superior Técnico (IST) in Portugal.
- Attended and presented a paper titled "Crowdsourcing for Disaster Relief : A Multi-platform Model" at the **IEEE DISCOVER conference** at NITK-Surathkal, 13-14 August 2016.
- Joint Convener (2016-17) and executive member (2013-2017), of the Institution of Engineers, NITK-Surathkal Chapter, one of four exclusive technical clubs of the college.
- Part of the Volleyball team, NITK-Surathkal.