

DANIEL R. RASHID

Language Technologies Institute
School of Computer Science
Carnegie Mellon University
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EDUCATION

Carnegie Mellon University, Pittsburgh PA.
Ph.D. Student, Language Technologies Institute, 2007-Present.
Advised by Dr. Alon Lavie.

University of Washington, Seattle WA.
Bachelor of Science, Computer Science, 2002-2006.
Magna Cum Laude, 3.88 GPA, 3.86 CS GPA.

EMPLOYMENT

Graduate Research Assistant,
Carnegie Mellon University. 2007-Present.

Project: **Discriminative Knowledge-Rich Language Modeling (DKRLM) for Machine Translation** *with Alon Lavie and Rebecca Hwa (Univ. of Pittsburgh)*

In this work we seek to discover features in natural language which are indicative of higher translation quality and build discriminative language models for use in machine translation applications in place of the standard n-gram language models. Using large monolingual corpora and machine learning techniques we attempt to train models which better model the plausibility of a sentence.

My Contributions: Developer of all software related to this project; Contributor of ideas in the design/research/planning meetings.

Project: **Relative Keyboard Input System** [1] *with Noah Smith*

Developing an input system which leverages the relative position of the input points. This location independent representation allows the user to touch-type anywhere on a sensing surface without a visually displayed keyboard. Utilizing techniques such as language modeling we are able to disambiguate the intended words and resolve user errors.

My Contributions: Inventor of system; Developer of all related software.

Undergraduate Research Assistant, Neural Systems Group,
University of Washington. 2005-2006.

Project: **Learning Nonparametric Models for Probabilistic Imitation** [2] *with David Grimes and Rajesh Rao*

The goal of this work was to develop a statistical model which could approximate complex non-linear functions, for use in robotics and related tasks. We trained statistical models via random exploration ("babbling") of the input and output spaces. During the course of this work we investigated the dynamics of a humanoid robot model, as well as a bio-mechanical human arm model. Using our trained models we attempted to compute paths to goal positions, such as in the case of our Fujitsu Hoap-2 robot, a stable point with 0 velocity.

My Contributions: I developed testing scripts, explored the feasibility and accuracy of different statistical models such as Gaussian Process and Gaussian Mixture Regression models, and assisted in other areas when necessary.

Computer Science Lab Consultant, Department of Computer Science,
University of Washington. Four quarters, 2004-2006.

PUBLICATIONS

- [1] Daniel R. Rashid & Noah A. Smith. *Relative Keyboard Input System*. IUI '08: Proceedings of the 13th international conference on Intelligent User Interfaces. Canary Islands, Spain, 2008, ACM Press.
- [2] David B. Grimes, Daniel R. Rashid & Rajesh P. N. Rao. *Learning Nonparametric Models for Probabilistic Imitation* in Advances in Neural Information Processing Systems 19 (NIPS'06). Cambridge, MA: MIT Press.

CONFERENCE PRESENTATIONS

Daniel R. Rashid & Noah A. Smith. *Relative Keyboard Input System*. IUI '08: Proceedings of the 13th international conference on Intelligent User Interfaces. Canary Islands, Spain, 2008, ACM Press.

SKILLS

Programming Languages

Completed Projects in Java, Python, C, C#, PHP, ML, Scheme, Matlab, Smalltalk, HTML, MIPS Assembly, Perl, UNIX shell scripting, and SQL.

Graduate Courses

Algorithms for Natural Language Processing, Grammars and Lexicons, Language and Statistics, Natural Language Processing Lab, Grammar Formalisms, Advanced MT Seminar (Audit)

Areas of Study Included

Natural Language Processing, Machine Translation, Artificial Intelligence, Data Compression, Databases, Operating Systems, Compilers, Programming Languages.

ADDITIONAL ACTIVITIES

Photographer

Versatile photographer with extensive knowledge of dSLRs, digital photo editing, black and white darkroom printing, etc. Prints of my photographs are available for sale and my work has been published in Dossier (2007), the Art and Literary Magazine at Carnegie Mellon University.