

## Maulik Rajendra Kamdar

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### EDUCATION

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**Stanford University** Stanford, CA  
*Doctor of Philosophy (Ph.D.), Biomedical Informatics Program* 2014 – 2018  
Dissertation: *A Web-based Integration Framework over Heterogeneous Biomedical Data and Knowledge Sources*

**Indian Institute of Technology (IIT), Kharagpur** Kharagpur, India  
*B.Tech. (Honors) and M.Tech., Biotechnology and Biochemical Engineering* 2007 – 2012

### RESEARCH EXPERIENCE

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**Center for Biomedical Informatics Research, Stanford University** Stanford, CA  
*Graduate Student Researcher* Sep. 2014 – current

- Advisor: Dr. Mark Musen
- Developed methods to integrate and analyze pharmacological or viral data and knowledge from multiple sources.
- Analyzed how users explore, query and reuse concept terms across more than 300 biomedical ontologies.
- Developed an application to monitor mental state using Samsung wearables and machine learning models.
- Developed a deep learning architecture to predict MGMT gene methylation status using brain MRI scans.

**Digital Enterprise Research Institute, NUI Galway** Galway, Ireland  
*Linked Data Researcher* July 2012 – July 2014

- Supervisors: Dr. Stefan Decker and Dr. Helena Deus
- Developed a platform that integrates and visualizes biological knowledge with the TCGA cancer patients data.
- Developed a federated query interface for interactive search and visualization of 80+ linked data sources.
- Developed the first version of the Data.gov.ie platform for search and access of open Irish datasets.

**Google Summer of Code Program - Reactome** Kharagpur, India  
*Summer of Code Researcher* June – Aug. 2011, 2012

- Supervisors: Dr. Guanming Wu and Dr. David Croft
- Developed HTML5 interfaces to visualize and summarize biological pathways in the Reactome database.

**Digital Enterprise Research Institute, NUI Galway** Galway, Ireland  
*Visiting Student Researcher* June – July 2011

- Developed a Drupal module for querying and visualizing semantically-enriched multi-dimensional statistics.

**Department of Biotechnology, IIT Kharagpur** Kharagpur, India  
*Undergraduate Student Researcher* Aug. 2010 – May. 2012

- Advisor: Dr. Mrinal Kumar Maiti
- Isolated and characterized an extracellular antifungal protein from an endophytic fungal isolate.

**Google Summer of Code Program - Drupal** Kharagpur, India  
*Summer of Code Researcher* June – Aug. 2010

- Developed a module for providing HTML5 support to the Drupal open-source content management platform.

**Biocon Foundation** Bangalore, India  
*Project Trainee* May – June 2010

- Analyzed claims and enrollment data to detect usage trends for a health micro-insurance scheme.

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**HONORS AND AWARDS**


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<b>Remote Student Teaching Excellence Award</b> - Stanford University	2018
<b>Distinguished Paper Award</b> - American Medical Informatics Association Symposium	2017
<b>Student Best Paper Award</b> - 16th International Semantic Web Conference	2017
<b>Honorable Mention</b> - International Medical Informatics Association Yearbook	2017
<b>Best Poster Awards</b> ( <i>3 consecutive years</i> ) - Stanford Biomedical Informatics Retreat	2015–2017
<b>NSF/NIH-NLM Travel Awards</b> - US2TS 2018, ISWC 2017, GRC 2016, and PSB 2016	2016–2018
<b>Best Paper Award</b> - 7th Conference on Semantics in Healthcare and Life Sciences	2014
<b>Semantic Web Challenge Award</b> - 12th International Semantic Web Conference	2013
<b>Best Project Award</b> - 10th Summer School on Ontology Engineering and the Semantic Web	2013
<b>Best Poster Award</b> - 10th Summer School on Ontology Engineering and the Semantic Web	2013
<b>Google Summer of Code Scholarships</b> ( <i>3 consecutive years</i> ) - Drupal and Reactome	2010–2012
<b>Honorable Mention in Technology</b> - Indian Institute of Technology, Kharagpur	2012
<b>Best Outgoing Student</b> ( <i>Technology</i> ) - Meghnad Saha Hall of Residence, IIT Kharagpur	2012
<b>Xavierite Super Award</b> - St. Xavier's High School, Ahmedabad	2007

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**REFEREED PUBLICATIONS (21 Total)**


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- Polleres A, **Kamdar MR**, Fernandez JD, Tudorache T, Musen MA. A More Decentralized Vision for Linked Data. *Proceedings of the ISWC 2018 workshop on Decentralizing the Semantic Web*, October 2018.
- Kamdar MR**. Mining the Web of Life Sciences Linked Open Data for Mechanism-Based Pharmacovigilance. *Companion Proceedings of the The Web Conference 2018*, April 2018.
- Kamdar MR**, Walk S, Tudorache T, Musen MA. Analyzing User Interactions with Biomedical Ontologies: A Visual Perspective. *Journal of Web Semantics*, March 2018.
- Han L\*, **Kamdar MR\***. MRI to MGMT: Predicting Methylation Status in Glioblastoma Patients Using Convolutional Recurrent Neural Networks. *Proceedings of the 23rd Pacific Symposium on Biocomputing*, January 2018.
- Kamdar MR**, Musen MA. Mechanism-Based Pharmacovigilance Over the Life Sciences Linked Open Data Cloud. *Proceedings of the AMIA Annual Symposium*, November 2017. **DISTINGUISHED PAPER AWARD**.
- Kamdar MR**, Walk S, et al. BiOnIC: A Catalog of User Interactions with Biomedical Ontologies. *Proceedings of the 16th International Semantic Web Conference*, October 2017. **STUDENT BEST PAPER AWARD**.
- Kamdar MR**, Tudorache T, Musen MA. A Systematic Analysis of Term Reuse and Term Overlap across Biomedical Ontologies. *Semantic Web*, June 2017. **IMIA YEARBOOK HONORABLE MENTION**.
- Kamdar MR**, Musen MA. PhLeGrA: Graph Analytics in Pharmacology over the Web of Life Sciences Linked Open Data. *Proceedings of the 26th World Wide Web Conference*, April 2017.
- Kamdar MR\***, Wu MJ\*. PRISM: A Data-driven Platform for Monitoring Mental Health. *Proceedings of the 21st Pacific Symposium on Biocomputing*, January 2016.
- Kamdar MR**, Tudorache T, Musen MA. Investigating Term Reuse and Overlap in Biomedical Ontologies. *Proceedings of the 6th International Conference on Biomedical Ontology*, July 2015.
- Kamdar MR**, Dumontier M. An Ebola Virus-centered Knowledge Base. *Database: The Journal of Biological Databases and Curation*, April 2015.
- Hasnain A, Zainab SS, **Kamdar MR**, Mehmood Q, Warren CN, et al. A Roadmap for navigating the Life Sciences Linked Open Data Cloud. *Proceedings of the 4th Joint International Semantic Technology*, November 2014.

13. Saleem M, **Kamdar MR**, Iqbal A, Sampath S, Deus HF, Ngomo AC. Big Linked Cancer Data: Integrating Linked TCGA and PubMed. *Journal of Web Semantics*, October 2014.
14. Kazemzadeh L, **Kamdar MR**, Beyan OD, Decker S, Barry F. LinkedPPI: Enabling Intuitive, Integrative Protein-Protein Interaction Discovery. *Proceedings of the 4th Workshop on Linked Science, ISWC*, October 2014.
15. Hasnain A, **Kamdar MR**, Hasapis P, Zeginis D, et al. Linked Biomedical Dataspace: Lessons Learned integrating Data for Drug Discovery. *Proceedings of the 13th International Semantic Web Conference*, October 2014.
16. Cyganiak R, **Kamdar MR**, Maali F, Lee D, Decker S. Open Data Ireland: Data Audit Report. *Irish Open Data Initiative*, May 2014 (Book Chapter).
17. **Kamdar MR**, et al. GenomeSnip: Fragmenting the Genomic Wheel to augment discovery in cancer research. *7th Conference on Semantics in Healthcare and Life Sciences*, February 2014. **BEST PAPER AWARD**.
18. **Kamdar MR**, Zeginis D, Hasnain A, Decker S, Deus HF. ReVeLD: A User-driven Domain-specific Interactive Search Platform for Biomedical Research. *Journal of Biomedical Informatics*, February 2014.
19. Croft D, Mundo AF, Haw R, Milacic M, Weiser J, Wu G, Caudy M, Garapati P, Gillespie M, **Kamdar MR**, Jassal B, et al. The Reactome Pathway Knowledgebase. *Nucleic Acids Research (Database Issue)*, January 2014.
20. Saleem M, **Kamdar MR**, Iqbal A, Sampath S, Deus HF, Ngomo AC. Fostering Serendipity through Big Linked Data. *Semantic Web Challenge, ISWC*, October 2013. **SEMANTIC WEB CHALLENGE AWARD**.
21. Dey P, **Kamdar MR**, Mandal SM, Maiti MK. Identification of an extracellular antifungal protein from the endophytic fungus *Colletotrichum DM06*. *Protein and Peptide Letters*, February 2013.

#### IN-PROGRESS PUBLICATIONS

1. **Kamdar MR**, Musen MA. An Empirical Meta-analysis of the Life Sciences (Linked?) Open Data Cloud.
2. Maitra A, Zulman DM, **Kamdar MR**, Haverfield MC, Thadaney S, Verghese A, Musen MA. Using Anthropological Methods to Classify the Human Experience in Medicine: A Case Study of the Presence Ontology.

#### **PODIUM PRESENTATIONS (13 Total)**

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1. **Kamdar MR**, Walk S, Tudorache T, Musen MA. "Analyzing User Interactions with Biomedical Ontologies: A Visual Perspective". *17th International Semantic Web Conference*, October 2018. **INVITED TALK**.
2. **Kamdar MR**, Tudorache T, Musen MA. "A Systematic Analysis of Term Reuse and Term Overlap across Biomedical Ontologies". *17th International Semantic Web Conference*, October 2018. **INVITED TALK**.
3. **Kamdar MR**. "Semantic Web Methods for Biomedical Data Integration: An Application in Pharmacovigilance". *NASA Ames Research Center (Intelligent Systems Division)*, August 2018. **INVITED TALK**.
4. **Kamdar MR**. "A Web-based Integration Framework over Heterogeneous Biomedical Data and Knowledge Sources". *Stanford Biomedical Informatics Program Defense Talk*, June 2018.
5. **Kamdar MR**. "Mining the Web of Life Sciences Linked Open Data for Mechanism-Based Pharmacovigilance". *The Web Conference 2018*, April 2018.
6. **Kamdar MR**, Musen MA. "Mechanism-based Pharmacovigilance over the Life Sciences Linked Open Data Cloud". *American Medical Informatics Association Annual Symposium*, November 2017.

7. **Kamdar MR**, Walk S, Tudorache T, Musen MA. “BiOnIC: A Catalog of User Interactions with Biomedical Ontologies”. *16th International Semantic Web Conference*, October 2017.
8. **Kamdar MR**, Musen MA. “Graph Analytics in Pharmacology over the Web of Life Sciences Linked Open Data”. *26th World Wide Web Conference*, April 2017.
9. **Kamdar MR**. “Query Federation over the Life Sciences Linked Open Data Cloud”. *Biomedical Informatics Research Seminar*, November 2016.
10. **Kamdar MR\***, Wu MJ\*. “PRISM: A Data-driven Platform for Monitoring Mental Health”. *21st Pacific Symposium on Biocomputing*, January 2016.
11. **Kamdar MR**, Tudorache T, Musen MA. “Investigating Term Reuse and Overlap in Biomedical Ontologies”. *6th International Conference on Biomedical Ontology*, July 2015.
12. **Kamdar MR**. “Current advances to bridge the usability–expressivity gap in semantic search (and visualizing linked data)”. *Protégé Research Seminar*, March 2015.
13. **Kamdar MR**, et al. “ReVeLD: a Real-time Visual Explorer and Aggregator of Linked Data”. *Digital Enterprise Research Institute Research Seminar*, April 2013.

#### **POSTER PRESENTATIONS (11 Total)**

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1. **Kamdar MR**, Musen MA. “Mining the Life Sciences Linked Open Data Cloud: An Application to Discover Drug-Adverse Reaction Associations”. *1st US Semantic Technologies Symposium*, March 2018.
2. Han L\*, **Kamdar MR\***. “MRI to MGMT: Predicting Methylation Status in Glioblastoma Patients Using Convolutional Recurrent Neural Networks”. *23rd Pacific Symposium on Biocomputing*, January 2018.
3. **Kamdar MR**, et al. “Analyzing User Interactions with Biomedical Ontologies: A Visual Perspective”. *Stanford Biomedical Informatics Annual Poster Session*, September 2017. **BEST POSTER AWARD.**
4. **Kamdar MR**, Musen MA. “Mining the Life Sciences Linked Open Data Cloud”. *Stanford Biomedical Informatics Annual Poster Session*, September 2016. **BEST POSTER AWARD.**
5. **Kamdar MR**, Musen MA. “Mining the Life Sciences Linked Open Data Cloud for Drug–Adverse Reaction Association Discovery”. *1st Gordon Research Conference on Advanced Health Informatics*, July 2016.
6. Han L\*, **Kamdar MR\***, Kim D\*. “Predicting Transcription Factor Complexes Using Similarities in Genomic Motifs”. *Big Data in Biomedicine Conference*, April 2016.
7. **Kamdar MR**, Tudorache T, Musen MA. “Extracting Similar Flavors in the Spaghetti of Biomedical Ontologies”. *Stanford Biomedical Informatics Annual Poster Session*, September 2015. **BEST POSTER AWARD.**
8. Han L\*, **Kamdar MR\***, Haynes WA\*, Schuler A\*. “Bioinformatics Search”. *Big Data in Biomedicine Conference*, April 2015.
9. **Kamdar MR**, et al. “An Ebola-centered Knowledge Base”. *Bio-X Interdisciplinary Symposium*, February 2015.
10. **Kamdar MR**. “Visualizing Personalized Cancer Risk Prediction”. *CS229 Poster Session*, December 2014.
11. **Kamdar MR**. “ReVeLD: A user-driven domain-specific interactive search platform for biomedical research”. *10th Summer School on Ontology Engineering and the Semantic Web*, July 2013. **BEST POSTER AWARD.**

## LEADERSHIP EXPERIENCE

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<b>Goggles Optional: Student-run Weekly Science Podcast</b> <i>Web and Graphics Developer</i>	Stanford, CA 2015 – current
<b>Biomedical Computation at Stanford (BCATS 2016) Conference</b> <i>Meeting Organizer</i>	Stanford, CA 2015 – 2016
<b>Meghnad Saha Hall of Residence, IIT Kharagpur</b> <i>Technology Head</i>	Kharagpur, India 2010 – 2012
<b>Department of Biotechnology, IIT Kharagpur</b> <i>Vice President</i>	Kharagpur, India 2010 – 2011
<b>Kshitij: IIT Kharagpur Techno-Management Symposium</b> <i>Web Team Lead Developer</i>	Kharagpur, India 2008 – 2010

## ACADEMIC SERVICE

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<b>Stanford University</b> <i>Co-Instructor and Teaching Assistant (3 terms):</i> “ <i>Modeling Biomedical Systems: Ontology, Terminology, Problem Solving</i> ”	Stanford, CA 2016 – 2018
<b>REMOTE STUDENT TEACHING EXCELLENCE AWARD</b>	
<b>American Medical Informatics Association Annual Symposium (AMIA 2018)</b> <i>Reviewer (2 papers)</i>	Stanford, CA Nov. 2018
<b>International Workshop on Intelligence &amp; Interaction in Knowledge Engineering (IIKE 2018)</b> <i>Program Committee Member</i>	Stanford, CA Oct. 2018
<b>Journal of Web Semantics</b> <i>Reviewer (5 papers)</i>	Stanford, CA 2017 – 2018
<b>International Semantic Web Conference (ISWC 2017)</b> <i>Reviewer (2 papers)</i>	Stanford, CA Oct. 2017
<b>Journal of Biomedical Informatics</b> <i>Reviewer (3 papers)</i>	Stanford, CA 2014 – 2017
<b>WebGL Game Development Book, Packt Publishing</b> <i>Technical Reviewer</i>	Galway, Ireland 2013 – 2014
<b>Indian Institute of Technology, Kharagpur</b> <i>Teaching Assistant: “Cell and Molecular Biology Laboratory” and “Biochemistry Laboratory”</i>	Kharagpur, India 2011 – 2012

## SKILLS

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- **Programming/Scripting:** Python, R, PHP, JavaScript, representation and querying languages (OWL, RDF, SPARQL, JSON, SQL, etc.), HTML5, WebGL, Unix (Bash, Awk); familiarity with: Java, C and MATLAB
- **Methods:** Semantic Web, Bioinformatics, Machine Learning, Deep Learning, Biostatistics, Network analysis
- **Miscellaneous:** Photoshop, Video Editing, Illustrator, Web Designing
- **Languages:** English, Hindi, Gujarati