

# IGOR MELNYK

IBM Thomas J. Watson Research Center ◊ AI Foundations Group ◊ Yorktown Heights, NY

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## SUMMARY

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Research staff member at IBM with 6+ years of experience working in the areas of Machine Learning and AI with the focus on Generative models in Natural Language Processing, Computer Vision and Biology

## EDUCATION

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**PhD in Computer Science and Engineering**, University of Minnesota, Minneapolis, MN June, 2016

**MS in Computer Science**, University of Colorado, Boulder, CO May, 2009

**BS in Computer Science**, Dnipro National University, Dnipro, Ukraine June, 2004

## RESEARCH INTERESTS / SKILLS

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**Machine Learning / AI** Generative Models, Knowledge Graph, Protein Design, Anomaly Detection  
Style Transfer, Information Theory, Image Captioning

**Technical Skills** Python/C++, Pytorch/Tensoflow

## EXPERIENCE

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**Research Staff Member** Sep 2016 - Present  
IBM Research AI Yorktown Heights, NY

**Research Assistant** Sep 2009 - June 2016  
University of Minnesota Minneapolis, MN

**Data Scientist** May 2014 - Aug 2014  
NASA Ames Research Center Mountain View, CA

**Software Developer** May 2008 - Aug 2008  
Cisco Systems Boulder, CO

## SELECTED PUBLICATIONS

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- Larimar: LLMs with External Episodic Memory Control, *Preprint*, 2024
- AlphaFold Distillation for Protein Design, *NeurIPS W*, 2023
- Reprogramming Pretrained Language Models for Antibody Sequence Infilling, *ICML*, 2023
- Cloud-Based Real-Time Molecular Screening Platform with MolFormer, *ECML PKDD*, 2022
- Knowledge Graph Generation From Text, *EMNLP*, 2022
- Image Captioning as an Assistive Technology: Lessons Learned from VizWiz 2020 Challenge, *JAIR*, 2022
- Tabular Transformers for Modeling Multivariate Time Series, *ICASSP*, 2021
- Optimizing Mode Connectivity via Neuron Alignment, *NeurIPS*, 2020

## SELECTED CODE

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- [github.com/IBM/AFDistill](https://github.com/IBM/AFDistill): AlphaFold Distillation for Inverse Protein Folding
- [github.com/IBM/ReprogBERT](https://github.com/IBM/ReprogBERT): Model Reprogramming for Antibody Design
- [github.com/IBM/Grapher](https://github.com/IBM/Grapher): Knowledge Graph Generation From Text
- [github.com/imelnyk/ArxivPapers](https://github.com/imelnyk/ArxivPapers): Arxiv Papers Digest