

# ROYI RASSIN

rassinroyi@gmail.com

Second year PhD at BIU NLP lab, supervised by Prof. Yoav Goldberg. I'm broadly interested in pushing the limitations of generative multi-modal models and improving the alignment between modalities.

## EDUCATION

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<b>Ph.D</b> in Deep Learning Bar-Ilan University Advisor: Prof. Yoav Goldberg Research Topics: Image-text alignment and controlled generation.	2022 – Present
<b>M.Sc</b> in Natural Language Processing and Machine Learning Bar-Ilan University Graduated with a final grade of 94 (Dean's List). Advisor: Prof. Yoav Goldberg and Prof. Reut Tsarfaty Research Topics: Modeling implicit language.	2020 – 2022
<b>B.Sc</b> in Computer Science College of Management Graduated with a final grade of 94 (Dean's List). Final Project: Machine Learning for anomaly detection in an imbalanced setting.	2016 – 2019

## EXPERIENCE

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<b>Applied Science Internship, Amazon</b> Worked on a unique data resource for text retrieval models which will be submitted to a top NLP venue.	June 2023 - Dec 2023
<b>NLP Research &amp; Development, Tymely</b> <ul style="list-style-type: none"><li>Developed and implemented an intent classification model for a large label space, improving accuracy by an order of magnitude compared to the existing model.</li><li>Ensured the model's efficiency in terms of time and cost, while maintaining high performance across various organizations with unique and shared intents.</li><li>Optimized model performance to meet real-time processing requirements, contributing to enhanced productivity and user experience.</li><li>Collaborated with cross-functional teams to integrate the new model into production, successfully enhancing the company's product offerings.</li></ul>	March 2023 - June 2023
<b>Machine Learning Teaching Assistant</b> TA in multiple graduate-level machine learning courses for computer science students.	Oct 2019 - Oct 2023
<b>Research Engineer, Geva's Neuropsychology Lab</b> Tested neuroscientists' hypotheses on a research project which focuses on predicting infants' likelihood of developing social impairments through eye-movement	2019 - 2020
<b>Research Intern, Basis Technology</b> Developed an internal research framework; optimized performance of neural models for a Chinese Word Segmentation task; Researched the feasibility of learning instant-messages behavior from an email dataset.	Jul - Oct 2019

## PUBLICATIONS

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- Jiao Sun\*, Deqing Fu\*, Yushi Hu\*, Su Wang, **Royi Rassin**, Da-Cheng Juan, Dana Alon, Charles Herrmann, Sjoerd van Steenkiste, Ranjay Krishna, Cyrus Rashtchian **DreamSync: Aligning Text-to-Image Generation with Image Understanding Feedback**. Under review.
- **Royi Rassin**, Eran Hirsch, Daniel Glickman, Shauli Ravfogel, Yoav Goldberg, Gal Chechik. **Linguistic Binding in Diffusion Models: Enhancing Attribute Correspondence through Attention Map Alignment**. NeurIPS 2023 (oral 0.5% of papers).
- **Royi Rassin**, Yoav Goldberg, Reut Tsarfaty. **Conjunct Resolution in the Face of Verbal Omissions**. ACL 2023.
- **Royi Rassin\***, Shauli Ravfogel\*, Yoav Goldberg. **DALLE-2 is Seeing Double: Flaws in Word-to-Concept Mapping in Text2Image Models**. BlackBoxNLP@EMNLP 2022.

## ACADEMIC SERVICE

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Reviewer: EMNLP 2022, EACL 2023

## AWARDS

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- 2023 - 2026: Israeli Council for Higher Education (Vatat) Fellowship for Outstanding PhD Students in Data Science
- 2022-2026: The Presidential Scholarship for Outstanding PhD Students
- 2020-2022: The Departmental Scholarship for Outstanding MSc Students
- 2019: Dean's List (BSc Computer Science)
- 2018: Perach Distinguished Mentor in CS

## TECHNICAL STRENGTHS

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<b>Architectures</b>	Transformers, Diffusion models, Attention
<b>ML Tools</b>	PyTorch, HuggingFace, Tensorflow, spaCy, Scikit, Pandas, NumPy
<b>Languages</b>	Python, Javascript and React

## MISCELLANEOUS

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- 2022: Attended LxMLS, a selective Machine Learning for NLP summer school
- 2019: Visiting student at Xihua University - took part in a student delegation in order to strengthen the relations between Computer Science students in China and Israel
- 2018: Perach - mentored fellow CS students with learning difficulties