

# ROYI RASSIN

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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 Natural Language Processing and Machine 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>AI Research Intern, Google</b> Researching consistency in multimodality.	June 2024 - Present
<b>AI Research Intern, BRIA AI</b> Researching editing and robustness in text-to-image diffusion models.	Jan 2024 - April 2024
<b>Applied Science Internship, Amazon</b> Researched improved evaluation methodologies for text retrieval models, the work will be submitted to a top NLP venue.	June 2023 - Dec 2023
<b>NLP Research &amp; Development, Tymely</b> I trained, evaluated, and integrated the first deep learning model to production.	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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**Royi Rassin**, Aviv Slobodkin, Shauli Ravfogel, Yanai Elazar, Yoav Goldberg **GRADE: Quantifying Sample Diversity in Text-to-Image Models**. Under review.

Sahil Verma, **Royi Rassin**, Arnav Mohanty Das, Gantavya Bhatt, Preethi Seshadri, Chirag Shah, Jeff Bilmes, Hannaneh Hajishirzi, Yanai Elazar **How Many Van Goghs Does It Take to Van Gogh? Finding the Imitation Threshold**. Under review.

Lital Binyamin, Yoad Tewel, Hilit Segev, Eran Hirsch, **Royi Rassin**, Gal Chechik **Make It Count: Text-to-Image Generation with an Accurate Number of Objects**. Under review.

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.

Nitzan Guetta, Aviv Slobodkin, Aviya Maimon, Eliya Habba, **Royi Rassin**, Yonatan Bitton, Idan Szpektor, Amir Globerson, Yuval Elovici **Visual Riddles: a Commonsense and World Knowledge Challenge for Large Vision and Language Models**. NeurIPS 2024 Datasets and Benchmarks Track.

**Royi Rassin**, Yaron Fairstein, Oren Kalinsky, Guy Kushilevitz, Nachshon Cohen, Alexander Libov, Yoav Goldberg **Evaluating D-MERIT of Partial-annotation on Information Retrieval**. EMNLP 2024.

**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 (poster).

**Royi Rassin\***, Shauli Ravfogel\*, Yoav Goldberg. **DALLE-2 is Seeing Double: Flaws in Word-to-Concept Mapping in Text2Image Models**. BlackBoxNLP@EMNLP 2022 (poster).

## ACADEMIC SERVICE

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Reviewer: Regularly reviewing NeurIPS, ICLR, ICML, \*ACL

## 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
- 2022: Dean's List (MSc Computer Science)
- 2019: Dean's List (BSc Computer Science)
- 2018: Perach Distinguished Mentor in CS

## ACCEPTED TALKS

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**NeurIPS, Dec 2023:** Linguistic Binding in Diffusion Models: Enhancing Attribute Correspondence through Attention Map Alignment

## INVITED TALKS

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- Visual Computing seminar, Tel Aviv University (Jan, 2024)
- Prof. Yonatan Belinkov's NLP group, Technion (Jan, 2024)
- BRIA AI (Jan, 2024)

## 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