

NADER AKOURY

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EDUCATION

University of Massachusetts Amherst M.S. / Ph.D. in Computer Science (in progress)	2018–Present <i>Amherst, MA</i>
Guildhall at Southern Methodist University Graduate Certificate of Interactive Technology in Digital Game Development <i>Thesis: Computer Assisted Storytelling in Video Games</i>	2005–2007 <i>Plano, TX</i>
Purdue University B.S. in Computer Science and Mathematics Minor: Psychology	2000–2004 <i>West Lafayette, IN</i>

RESEARCH EXPERIENCE

Graduate Research Assistant <i>University of Massachusetts Amherst</i>	September 2018–Present <i>Amherst, MA</i>
<ul style="list-style-type: none">· Research fundamental advances in NLP and creative use of language.· Advisor: Mohit Iyyer	
Applied Scientist Intern <i>Amazon, Inc</i>	May 2021–August 2021 <i>Sunnyvale, CA (Remote)</i>
<ul style="list-style-type: none">· Develop new metrics for automatic evaluation of story generation.· Principal Investigator: Anjali Narayan-Chen	
Remote Research Assistant <i>Auburn University</i>	June 2017–May 2018 <i>Nome, AK (Remote)</i>
<ul style="list-style-type: none">· Investigate generative models in computer vision.· Principal Investigator: Anh Nguyen	

PEER-REVIEWED CONFERENCE PUBLICATIONS

1. The Perils of Using Mechanical Turk to Evaluate Open-Ended Text Generation
Marzena Karpinska, **Nader Akoury**, and Mohit Iyyer.
In *Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing*. 2021.
2. STORIUM: A Dataset and Evaluation Platform for Machine-in-the-Loop Story Generation
Nader Akoury, Shufan Wang, Josh Whiting, Stephen Hood, Nanyun Peng and Mohit Iyyer.
In *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing*. 2020.
3. Syntactically Supervised Transformers for Faster Neural Machine Translation
Nader Akoury, Kalpesh Krishna, and Mohit Iyyer.
In *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*. 2019.

TEACHING EXPERIENCE

Graduate Teaching Assistant CS685: Advanced Topics in Natural Language Processing <i>University of Massachusetts Amherst</i>	Spring 2021
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- Helped students with course material, homework, and final research project during weekly office hours and through online forums
- Graded homework, readings, literature review assignment, and in-class presentations
- Helped to design the homeworks and final project

Guest Lecturer

CS490A: Applications of Natural Language Processing

Fall 2020

University of Massachusetts Amherst

- In-depth coverage of text generation, story generation, and the Transformer architecture

Guest Lecturer

CS590G: Game Programming

Fall 2020

University of Massachusetts Amherst

- Highlighted the technology behind the MMORTS *End of Nations*

Graduate Teaching Assistant

CS690D: Deep Learning for Natural Language Processing

Spring 2019

University of Massachusetts Amherst

- Helped students with course material, homework, and final research project during weekly office hours and through online forums
- Graded literature review assignment and in-class presentations
- Helped to design the midterm and final project

OTHER PROJECTS

Spatial PixelCNN

Fall 2017

<https://arxiv.org/abs/1712.00714>

- Introduced a conditional autoregressive generative model able to construct full-sized images by training on small image patches

Generative Latent Attentive Sampler

Spring 2017

<https://github.com/dojoteef/glas>

<https://github.com/openai/requests-for-research/pull/28>

- Completed an OpenAI Request for Research which resulted in an onsite interview
- Introduced a deep recurrent variational autoencoder utilizing attention over the latent space parameterized by a Cauchy distribution

Denosing Variational Autoencoder

Summer 2016

<https://github.com/dojoteef/dvae>

- Investigated interplay between minimizing reconstruction loss versus KL divergence when applied a denosing criterion to a variational autoencoder

lualol/loltorch

Summer 2016

<https://github.com/dojoteef/lualol>

<https://github.com/dojoteef/luatorch>

- Created a Lua wrapper for the League of Legends API in order to pull data from the game servers
- Implemented a novel generative model in Torch7 for predicting the best equipment for a player
- Constructed a model which used a separate MLP per feature, with outputs combined based on a weighting generated from a neural network optimized by cosine similarity based on win/loss ratio

TALKS

- “SynST: Syntactically Supervised Transformers for Faster Neural Machine Translation” *Data Science Research Symposium, University of Massachusetts Amherst* April 24, 2019

SERVICE & OUTREACH

Reviewer

- ARR (starting October 2021)
- ACL 2021
- EMNLP 2019, 2020 (outstanding reviewer - top 10%), 2021 (outstanding reviewer - top 5%)
- AAAI 2020, 2021
- CoNLL 2019, 2020

Co-chair, CARE (Committee Against Racism and for Equity) July 2020–Present
University of Massachusetts Amherst

Championed creation of the Committee Against Racism and for Equity in the College of Information and Computer Sciences at the University of Massachusetts Amherst.

Co-chair of the committee, with support from the Dean and 60 active members including undergraduates, graduates, faculty, and staff.

Founding Member, B[U]ILT (Black, Indigenous, and LatinX in Tech) February 2019–Present
University of Massachusetts Amherst <https://cics-built.github.io>

An ally support network and educational resource for those historically marginalized in CS.

Mentor, Girls, Inc. Eureka! Coding Workshops Summer and Fall 2019
University of Massachusetts Amherst

Introduced CS to underrepresented girls from Holyoke, MA through the use of MIT Scratch.

INDUSTRY EXPERIENCE

Independent Contractor (Remote) November 2017–June 2018
Yelp, Inc *Nome, AK*

- One of five engineers on the core iOS team supporting an eco-system of 30+ iOS developers

Software Engineer May 2015–March 2016
Petroglyph Games, Inc *Las Vegas, NV*

Grey Goo & Mobile Titles

- Helped implement matchmaking backend for Grey Goo using Java, Tomcat, and PostgreSQL
- Converted C# .NET server code to run on Linux with Apache, Docker, Mono, and PostgreSQL
- Implemented gameplay, backend, and UI on two mobile games using the Unity game engine
- Helped refactor code from a gameplay prototype to be production ready

Software Engineer (Remote) January 2015–April 2015
Yelp, Inc – Ad Delivery Division *Las Vegas, NV*

- Made the Ad Delivery system more robust through added testing and fault tolerance

Engineering Manager October 2013–December 2014
Yelp, Inc – Mobile Division *San Francisco, CA*

- Managed team through engineering challenges, e.g. transitioning Objective-C code base to ARC
- Guided the team as it more than doubled in size from six full-time engineers to thirteen
- Provided mentorship for the team and interns
- Helped coordinate work with the Hamburg, Germany office
- Made staffing decisions and administered performance improvement plans as needed

Software Engineer (Remote/On-site)

January 2013–October 2013

Yelp, Inc – Mobile Division

Las Vegas, NV & San Francisco, CA

- Implemented an updated Nearby Page for the iOS app
- Wrote both client-side Objective-C code and server-side Python code

Lead Programmer

August 2012–December 2012

Lead Platform Programmer

August 2010–August 2012

AI Programmer

June 2008–August 2010

Programmer

April 2007–June 2008

Petroglyph Games, Inc

Las Vegas, NV

End of Nations (PC)

May 2008–December 2012

- Managed a team of ~ 25 programmers working on a first of its kind massively multiplayer online real time strategy game supporting up to 10k concurrent players on a single server cluster, with over 50 players on a single map (<https://www.youtube.com/watch?v=2JRkogAL3Uo>)
- Scheduled milestone tasks and communicated feature delivery timeline with other departments
- Guided architecture decisions in many areas including concurrency, server authority, gameplay systems
- Wrote and maintained many core systems including AI movement and targeting
- Worked within a client/server framework with a SQL database backend
- Helped optimize performance of game servers based on profiling
- Performed code reviews and mentored junior programmers

Universe at War: Earth Assault (PC/Xbox)

April 2007–April 2008

- Worked on a cross platform engine performing PC and Xbox 360 tasks
- Worked on multiplayer matchmaking code and lobbies
- Worked with artists to implement GUI scenes using a Lua script based GUI system
- Ensured Games for Windows LIVE and Xbox 360 TCR compliance
- Created the installer for the PC SKU and created the Demo for the Xbox 360
- Implemented bug fixes in the engine and game
- Became proficient debugging PowerPC assembly code

Engine/Tools Programmer (Intern)

July 2006–September 2006

High Voltage Software, Inc – Mobile Division

Schaumburg, IL

Ghost Recon: Advance Warfighter 2 (PSP)

- Worked on a cross platform engine doing PC, PSP, and Xbox tasks
- Integrated a Flash UI middleware product on PC, PSP, and Xbox versions of the engine
- Worked with UI team to ensure UIs fit within memory and needed features were properly supported
- Worked with artists on rendering fixes for the PSP
- Implemented functionality to conform with existing PS2 rendering code