

# Lucio Dery

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## EDUCATION

**Carnegie Mellon University**

*PhD in Computer Science*

**Pittsburgh, PA**

*Expected Graduation: June 2024*

**Stanford University**

*MS in Computer Science \*\* Tau Beta Pi*

**Stanford, CA**

*Sept 2016 - June 2018*

**Stanford University**

*BS in Physics + Minor in Computer Science \*\* With Distinction*

**Stanford, CA**

*Sept 2013 - June 2018*

## RESEARCH INTERESTS

- Transfer Learning, Meta-Learning, Multitasking, Weak Supervision, Natural Language Processing

## PUBLICATIONS / TALKS

### Journal Papers.....

- **Lucio M. Dery**, et al. "Weakly supervised classification in high energy physics." Journal of High Energy Physics 2017.5 (2017): 1-11 [[Paper](#)] [[Code](#)]

### Conference Papers.....

- **Lucio M. Dery**, Paul Michel, Ameeet Talwalkar, Graham Neubig. "Should We Be Pre-training? An Argument for End-task Aware Training as an Alternative" ICLR, 2022 [[Paper](#)][[Code](#)]
- **Lucio M. Dery**, Yann Dauphin, David Grangier. "Auxiliary task update decomposition: the good, the bad and the neutral". ICLR, 2021 [[Paper](#)][[Code](#)]
- Eli Shlizerman, **Lucio M. Dery**, Hayden Schoen, Ira Kemelmacher. "Audio to Body Dynamics." CVPR, 2018 [[Paper](#)][[Code](#)][[Press](#)]
- D.A-Huang, Shyamal Buch, **Lucio M. Dery**, Animesh Garg, Li Fei-Fei, Juan Carlos Nieves. "Finding 'It': Weakly-Supervised Reference-Aware Visual Grounding in Instructional Video." CVPR, 2018 ([Oral](#))[[Paper](#)][[Code](#)]

### Pre-prints / Ongoing Work.....

- **Lucio M. Dery**, Paul Michel, Mikhail Khodak, Graham Neubig, Ameeet Talwalkar. "AANG: Automating Auxiliary Learning" (under submission) [[Paper](#)]
- **Lucio M. Dery**, Yutian Chen, Abram L Friesen, Marc'Aurelio Ranzato. "Multistep planning for automated hyper-parameter optimization : An exploration via OptFormer" (under submission)
- Junhong Shen, Liam Li, **Lucio M. Dery**, Corey Staten, Mikhail Khodak, Graham Neubig, Ameeet Talwalkar. "A Practical Framework for Cross-Domain Transfer Learning" (under submission)

### Patents.....

- **Lucio M. Dery**, Yann Dauphin, David Grangier. "Training Neural Networks Using Auxiliary Task Update Decomposition" [[Patent](#)]

### Invited Talks.....

- 2018 Black In A.I Workshop. Neural Information Processing Systems (NeurIPS), Invited Talk
- 2017 International Workshop on Advanced Computing and Analysis Techniques in Physics Research (ACAT), Poster Presentation

- 2017 Black In A.I Workshop. Neural Information Processing Systems (NIPS), Poster Presentation

## INDUSTRY EXPERIENCE

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### DeepMind

London, UK

*Research Scientist Intern*

May 2022 - August 2022

- Worked on data-driven hyper-parameter optimization using transformers (**OptFormer**)
- Focused on inference-time improvements to OptFormer

### Google Brain - Google

Remote

*Research Scientist Intern*

June 2020 - August 2020

- Leveraged out-of-distribution data via Gradient Alignment
- Examined auxiliary task gradients within subspace spanned by primary task gradients

### Facebook A.I Research - Facebook

Seattle, WA

*Research Engineer*

July 2018 - July 2019

- Studied learning Neural Knowledge Graphs by Generating Wikipedia
- Probed Commonsense and World Knowledge Capabilities of State-of-the-Art Co-reference Models
- Open-sourced **Audio to Body Dynamics**
- Contributed to **FAIRSEQ**

### Applied Machine Learning - Facebook

Seattle, WA

*Software Engineering Intern*

June 2017 - August 2017

- Worked on Audio-Visio Multimodal Learning for understanding human mannerisms
- Developed recurrent architecture for learning transformations from audio features to body key-points

### Terra Bella - Google

Mountain View, CA

*Software Engineering Intern*

June 2016 - August 2016

- Applied unsupervised learning techniques to Satellite images to cluster similar socio-economic regions and detect changing regions over time
- Extensive feature engineering through experimentation with remote sensing signal spaces like NDVI (Normalized Difference of Vegetation Index), MSAVI and NDBI
- Built Tensor Flow model that utilized Inception V3 featurization of remote sensing signal spaces to automatically identify similar regions like Golf Courses or Airports within and across cities

### Google Analytics - Google

Mountain View, CA

*Engineering Practicum Intern*

June 2015 - August 2015

- Conducted background experimentation and comparative performance visualizations in R on time series prediction algorithms in Analytics libraries against third party algorithms
- Implemented Autoregressive Integrated Moving Averages (ARIMA) time series forecasting. Resulting implementation was on average faster than R implementation and of comparable accuracy
- Exposed ensemble mode API that allows developers to use suite of forecasting algorithms

## TEACHING EXPERIENCE

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- Teaching Assistant, **Advanced Natural Language Processing**, Fall 2022
- Section Leader, **Stanford Code In Place**, Spring 2020
- Computer Vision Instructor, **African Masters in Machine Intelligence**, Summer 2019
- Head Teaching Assistant, Deep Learning (CS230) Stanford University, Spring 2018
- Course Assistant, Deep Learning (CS230), Stanford University, Winter 2018
- Course Assistant, Machine Learning (CS229), Stanford University, Autumn 2017
- Section Leader, Programming Methodology (CS106A), Stanford University, 2014 - 2017
- Section Leader, Programming Abstractions (CS106B), Stanford University, 2014 - 2017
- Summer School Instructor, **Enza Academy**, Summer 2015

## HONORS / AWARDS

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- 2<sup>nd</sup> Place Two Sigma Diversity PhD Fellowship
- Stanford Chapter Tau Beta Pi Honor Society
- Stanford Black Community Center Award for Academic Excellence
- Stanford Center for African Studies Leadership and Service Award
- Stanford Computer Science Department TA Award (\$1000 awarded to top 5% of Course Assistants in Spring 2018)
- 3rd Best Student, West African Senior Secondary Certificate Examination (out of over 2.5 million students from Anglophone West Africa in 2013)
- 2nd Place, Ghana National Math and Science Olympiad (out of 32 Selected Schools)

## SERVICE

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- Reviewer - ICLR 2022, ICML 2022, NEURIPS 2022
- Graduate School Application Mentorship - **Black In AI**
- Mock Interviewer - Underrepresented minorities seeking Software Engineering Roles