Some of these resources might be helpful during your time in academia. I have also added some software and GitHub repositories I use daily.
(Most related to academia are taken from Clemens Eppner's webpage and Paul Liang's GitHub)

Other similar collections

Grad School Advice by Jason Hong

Advice for Research Students by Jason Eisner

Advice for researchers and students by Michael Ernst

Advice Collection by Tao Xie and Yuan Xie

Awesome CS PhD application advice by Jed Yang

CS PhD the greatest hits by Angela Jiang

List of PhD reflections by Stephen Tu

Thread of PhD application resources by Chaitanya Joshi

Useful computer vision PhD resources by Yana Hasson

Checklists for Stat-ML PhD students by Aaditya Ramdas

Grad School Resources by Kalpesh Krishna

AI Research Experiences by Pranav Rajpurkar

Related to Academia

Academic Writing

- **Papers**
  - Alberto Rodriguez: Good Practices for Good Writing (from the R:SS 2020 workshop Citizens of Robotics Research)
  - Amy Tabb: Basic Submission Checklist
  - Bill Freeman: How to Write a Good Research Paper [Slides] (from the CVPR 2018 workshop Good Citizen of CVPR)
  - Brett Mensh and Konrad Kording: Ten Simple Rules for Structuring Papers
  - Cormac McCarthy: Novelist Cormac McCarthy's Tips on How to Write a Great Science Paper
  - Devi Parikh: Planning Paper Writing
  - George Whitesides: How to Write a Paper to Communicate Your Research

- Jitendra Malik: How to Write a Good Paper [Slides] (from the CVPR 2018 workshop Good Citizen of CVPR)
    - Kate Saenko: How to Write the Introduction for a Research Paper
    - Kevin P. Lee: A Guide to Writing Mathematics
    - Larry McEnerney: Leadership Lab: The Craft of Writing Effectively
    - Marcel Hofeditz: 5 Academic Writing Tips for Non-Native Speakers
    - Pratap Tokekar: Thoughts on Writing a Good (Robotics) Paper
    - Simon Peyton Jones: How to Write a Great Research Paper (Talk)
    - Stefanie Tellex: Writing a Technical Paper
    - Virginia Gewin: How to Write a First-Class Paper
    - Zachary Lipton: Heuristics for Scientific Writing (a Machine Learning Perspective)
- **Abstracts**
    - Chittaranjan Andrade: How to Write a Good Abstract for a Scientific Paper or Conference Presentation
    - Juliana Carvalho Ferreira and Cecilia Maria Patino: Twelve Tips to Write an Abstract for a Conference: Advice for Young and Experienced Investigators
    - Nadine J. Kabengi: Tips for Writing an Abstract
    - Nature 435, 114-118 (2005): How to Construct a Nature Summary Paragraph
    - Philip Koopman: How to Write an Abstract
- **Reviews**
    - Amy Tabb: My Reviewing Style, or How to Review Technical Papers When You've Not Been Taught How
    - Devi Parikh, Dhruv Battra, and Stefan Lee: How We Write Rebuttals
    - EMNLP Committee Blog: Advice on Reviewing for EMNLP
    - Seth Hutchinson: Surviving the Review Process
- **Research Statements**
    - Carnegie Mellon University, Global Communication Center: Writing A Research Statement
- **Research Proposals**
    - George A. Hazelrigg: Twelve Steps to a Winning Research Proposal
    - George A. Hazelrigg: Honing Your Proposal Writing Skills
    - Jeff Trinkle: Some Keys to Preparing a Competitive Proposal From My Observations
- **Posters**
    - Amy Tabb: Poster Session Strategies
- **LaTeX**
    - Devi Parikh: Shortening Papers to Fit Page Limits
    - Dustin Tran: Better LaTeX Defaults
    - Jia-Bin Huang: Paper Writing with LaTeX
    - Markus Püschel: Small Guide to Making Nice Tables
    - Noah Snavely: A Short LaTeX Style Guide
- **Citing**
    - Citation Machine Smart Writing

Research

- **General Advice**

- Academia Stack Exchange: Posts Tagged With [research-process]
- Chris Olah: Research Taste Exercises
- Colin Chandler: What Is the Meaning of Impact in Relation to Research and Why Does It Matter? A View From Inside Academia
- Cordelia Schmid: How to Do Good Research & Evaluation [Slides] (from the CVPR 2018 workshop Good Citizen of CVPR)
- David Epstein: Why Specializing Early Doesn't Always Mean Career Success
- Danica Kragic: Building an Academic Career [Slides] (from the R:SS 2020 workshop Citizens of Robotics Research)
- David Patterson: How to Have a Bad Career in Research/Academia
- Donald Knuth: My Advice to Young People and On work habits, problem solving, and happiness (by Shuvomoy Das Gupta)
- Eugene Vinitsky: Personal Rules of Productive Research
- H.T. Kung: Useful Thoughts about Research
- Jeff Trinkle: Identifying a Fundable Research Project
- Jia-Bin Huang: How to Come Up With Research Ideas?
- Jim Kurose: 15 Pieces of Advice I Wish My PhD Advisor Had Given Me
- John Schulman: An Opinionated Guide to ML Research
- Mark Dredze and Hanna M. Wallach: How to Be a Successful PhD Student
- Michael Nielsen: Principles of Effective Research
- Mor Naaman: A Syllabus for PhD Students Working in My Group
- Nick Feamster and Alex Gray: How to Do Great Research
- Remzi Arpaci-Dusseau: Graduate School: Keys To Success
- Richard Hamming: You and Your Research [Transcript]
- Rosanne Liu: AI Research: The Unreasonably Narrow Path and How not to be Miserable
- Rowan McAllister: Workshop Organization Guide
- Siddhartha Srinivasa: What Should I Work On? (from the R:SS 2020 workshop Citizens of Robotics Research)
- Vincent Vanhoucke: So You Want to Be a Research Scientist
- Vladlen Koltun: Doing (Good) Research [Slides] (from the CVPR 2018 workshop Good Citizen of CVPR)

- **Designing Experiments**

  - Anca Dragan: Intro to Experiment Design [Slides] (from the R:SS 2020 workshop Citizens of Robotics Research)
  - Andy Cockburn, Pierre Dragicevic, Lonni Besançon, and Carl Gutwin: Threats of a Replication Crisis in Empirical Computer Science (Talk)
  - Peter Norvig: Warning Signs in Experimental Design and Interpretation

- **Making Videos**

  - Stefanie Tellex, Eric Rosen, and George Konidaris: Best Practices for Robot Videos
  - Travis Deyle: Being Honest in Robot Videos: Motion Capture, Speedup Rates, and Teleoperation

- **Reading Papers**

- Alec Jacobson and Colin Raffel: Role-Playing Paper-Reading Seminars
- Andrew Ng: Career Advice / Reading Research Papers
- David Ha: How Do You Skim a Research Paper?
- Eric Jang: How to Understand ML Papers Quickly
- Jason Eisner: How to Read a Technical Paper
- Srinivasan Keshav: How to Read a Paper
- Yannic Kilcher: How I Read a Paper: Facebook's DETR

- **Giving Talks**

  - Kayvon Fatahalian: Tips for Giving Clear Talks
  - Kristen Grauman: Tips for Preparing a Clear Talk [Slides] (from the CVPR 2018 workshop Good Citizen of CVPR)
  - Patrick Winston: How To Speak (from his MIT course: https://ocw.mit.edu/how_to_speak)
  - Wolfram Burgard: How to Give a Presentation (from the R:SS 2020 workshop Citizens of Robotics Research)

- **Thinking Patterns and Unsolicited Advice**

  - Edward B. Burger and Michael Starbird: The 5 Elements of Effective Thinking
  - Gabriel Weinberg: Mental Models I Find Repeatedly Useful
  - George Mack: 15 of the most useful razors and rules I've found
  - Jesse Richardson, Andy Smith, Som Meaden, and Flip Creative: Thou Shalt not Commit Logical Fallacies
  - Kevin Kelly: 68 Bits of Unsolicited Advice, 99 Additional Bits of Unsolicited Advice
  - Nabeel Qureshi: How to Understand Things
  - Rhiannon Beaubien and Shane Parrish: Mental Models (~100 Models Explained)
  - Wikipedia: List of Cognitive Biases
  - Wikipedia: List of Fallacies
  - Wikipedia: Five whys

- **Communication**

  - Basecamp: How We Communicate
  - Basecamp: Group Chat Problems
  - Paul Graham: Maker's Schedule, Manager's schedule

- **Useful Website**

  - Paper Digest: Artificial Intelligence summarizes academic articles for you
    [//] [//]: # (- **Leaving Academia**)

Software

(Please use any recommended software or repositories at your own risk.)

Citation Manager

- Zotero: Citation Manager

Note-Taking on iPad and MacBook:

- Obsidian: Note-Taking - A knowledge base that works on local Markdown files
- Goodnotes Note down, shape, & share your ideas with the world's best digital paper
- Notability Note-Taking - Handwritten
- MarginNote A brand new e-reader to better study and digest your books - Good for reading papers and taking notes

Diagrams:

- draw.io: Flowchart Maker & Online Diagram Software Desktop Installer

Repositories

Building Academic Webpage

- Templates based on Jekyll
  - academic-website-template (I am using this as a template)
  - Minimal Mistakes Jekyll theme
  - academicpages.github.io
  - academic
  - al-folio
- Hosting
  - GitHub Pages

Python

- **Faster Python**
  - Jit Compilers
    - TorchDynamo is a Python-level JIT compiler designed to make unmodified PyTorch programs faster
    - Numba is an open source JIT compiler that translates a subset of Python and NumPy code into fast machine code.
  - Cython is an optimising static compiler for both the Python programming language
- **Logging**
  - loguru Python logging made (stupidly) simple

Project templates

- README
  - README Template
  - Best-README-Template
- Data Science Project
  - Lightning-Hydra-Template

- Cookiecutter Data Science

Deep Learning

- Deep Learning Model Convertors
- computervision-recipes Best Practices, code samples, and documentation for Computer Vision.
- labml Monitor deep learning model training and hardware usage from mobile.
- wandb
- Conf-Generator
- PyTorch Examples
- ONNX Model Zoo
- Tensorflor Model Garden

Other Resources

Academic Web Pages

- Matt Might's webpage
- Clemens Eppner's webpage)

Collection of advice for prospective and current PhD students

Credit goes out to the original authors of each link and Paul Liang (pliang@cs.cmu.edu).

Table of Contents

- General advice
- Statement of purpose
- Visit days, choosing advisor and school
- Advice for current students
  - PhD survival guides
  - Research
  - Reading
  - Writing
  - Blogposts
  - Reviewing
  - Presenting
  - Teaching
  - Fellowship applications
  - Networking
  - Organizing workshops and tutorials
  - Attending academic conferences
  - Job search
- Memoirs

Advice for prospective students

General advice

Applying to PhD Programs in Computer Science by Mor Harchol-Balter

Graduate School Advice by Stanford CS

Undergrad to PhD, or not - advice for undergrads interested in research by John Hewitt

HOWTO: Get into grad school for science, engineering, math and computer science by Matt Might

Applying for a PhD in NLP by Zhijing Jin and ACL Year-Round Mentorship Session

Student Perspectives on Applying to NLP PhD Programs by Akari Asai, John Hewitt, Sidd Karamcheti, Kalpesh Krishna, Nelson Liu, Roma Patel, and Nicholas Tomlin

Machine Learning PhD Applications — Everything You Need to Know by Tim Dettmers

Demystifying ML PhD Admissions to US Universities by Hima Lakkaraju

Demystifying PhD Admissions in Computer Science in the US: a Guide for Vietnamese and International Students by ThanhVu Nguyen

A long, rambling, mostly personal corpus of advice on applying to Computer Science grad school (for UWCSE students) by Justine Sherry

Ph.D. Applications: FAQ by Noah Smith

Quora answer on the admission committee process by Scott Fahlman

Reflecting on CS Graduate Admissions by David Anderson

A PhD is Not Enough: A Guide to Survival in Science by Peter Feibelman

The PhD in CS: Getting There and Being Successful by Michael Hilton, Janet Davis, and Ian Ludden

Statement of purpose

Database of Example PhD SOPs by the CS-SOP initiative

Some Suggestions on writing your statement of purpose by Jennifer Mankoff

Graduate School Personal Statements by Christopher Fletcher

Inside PhD admissions: What readers look for in a Statement of Purpose by Nathan Schneider

How to Write a Bad Statement by Andy Pavlo

Tips and Tricks, How-To Guide for Grad School SoPs by Erica Weng

Graduate School Statement of Purpose by MIT EECS

How to write personal statement for graduate school application by Stanley Chan

Writing a Google AI Residency Cover Letter by Katherine Lee and Ben Eysenbach

Public examples: [Cody Coleman], [Sai Rallabandi], [Jeremy Lacomis], [Sean Kross], [Zahid Hossain], [Jean Yang]

Visit days, choosing advisor and school

Questions to Ask a Prospective Ph.D. Advisor on Visit Day, With Thorough and Forthright Explanations by Andrew Kuznetsov

How to Choose Your Grad School by Tim Dettmers

How to Pick a Graduate Advisor by Ben Barres

The Definitive 'what do I ask/look for' in a PhD Advisor Guide by Columbia CS

Advice for current students

PhD survival guides

So long, and thanks for the PhD by Ronald T. Azuma

Graduate School: Keys To Success by Remzi Arpaci-Dusseau

The illustrated guide to a PhD by Matt Might

How to Be a Successful PhD Student by Mark Dredze, Hanna Wallach

Time Management by Randy Pausch

Advice to a Beginning Graduate Student by Manuel Blum

Finances for CS PhD students by David Anderson

A Survival Guide to a PhD by Andrej Karpathy

15 pieces of advice I wish my PhD advisor had given me by Jim Kurose

The Tao of PhD: Thriving in the Allen School's Graduate Program by University of Washington

10 tips for PhD students by Daniela Witten

Expectation Setting by Eugene Vinitsky

Research

How to Do Great Research by Nick Feamster and Alex Gray

How to Have a Bad Career How to Have a Bad Career in Research/Academia by David Patterson

Useful Thoughts about Research by H.T. Kung

You and Your Research by Richard Hamming

Advice on Research and Writing by Mark Leone

Reading

How to Read a Paper by Srinivasan Keshav

How to Read a Technical Paper by Jason Eisner

Writing

How to write a good CVPR submission by Bill Freeman

Ten Simple Rules for Mathematical Writing by Dimitri Bertsekas

Notes on writing by Fredo Durand

How to write a (hopefully good) paper by Martin Vetterli

Blogposts

PhDLife Blog - A collection of blog posts from Warwick University

Reviewing

Reviewer Tutorial by CVPR 2022

How to write a good review by CVPR 2020

[How to write a reviewer report by Stanley Chan](#)

Presenting

[Giving an Academic Talk by Jonathan Shewchuk](#)

[How to give a technical presentation by Michael Ernst](#)

Teaching

[How to Be a Teaching Assistant by Jason Eisner](#)

Fellowship applications

[Tips for the NSF GRFP Application by Danielle Perry](#)

[NSF GRFP Advice by Christine Liu](#)

[NSF Fellowship by Alex Lang](#)

[Tips by Tara Safavi](#)

Public examples: [Extensive NSF collection by Alex Lang], [Victoria Dean (NSF personal)], [Victoria Dean (NSF research)], [Tara Safavi (NSF)], [Paul Liang (Facebook)], [Devendra Chaplot (Facebook)], [Sai Rallabandi (Facebook)]

Networking

[Networking on the Network: A Guide to Professional Skills for PhD Students by Phil Agre](#)

Organizing workshops and tutorials

[Hitchhiker's guide to organizing an academic workshop by Ben Eysenbach and Surya Bhupatiraju](#)

Attending academic conferences

[Nine things I wish I had known the first time I came to NeurIPS by Jennifer Vaughan](#)

[NeurIPS 2018 through the eyes of first-timers by Fangyu Cai](#)

[How To Make A Plan To Attend International Academic Conferences](#)

Job search

[Tips for Computer Science Faculty Applications](#)

[How to Ask for a Letter of Recommendation](#)

[Interview Questions for Computer Science Faculty Jobs](#)

[The Ph.D. Job Hunt – Helping Students Find the Right Positions by Ed Lazowska](#)

The N Things I wish I Knew Before the Job Search, by Maria Ebling, Guerney Hunt, Lily Mummert, Bill Tetzlaff, and John Davis

The academic job search for computer scientists in 10 questions by Nicolas Papernot and Elissa Redmiles

Checklist for faculty job-hunting in Stat/ML by Aaditya Ramdas

Tips on the interview process by Jeannette Wing

Getting an academic job by Michael Ernst

Computer science graduate job and interview guide by Wes Weimer, Claire Le Goues, Zak Fry, Kevin Leach, Yu Huang, and Kevin Angstadt

Academic job search advice by Matt Might

Memoirs

I loved graduate school by Peter Bailis

What my PhD was like by Jean Yang

How to get a Ph.D. in computer science if you're me by Chris Martens

The N=1 guide to grad school by Adam Marcus