Ilya Kavalerov

ilyakavalerov@gmail.com • **github.com/ilyakava** • **ilyakavalerov.com**

Open Source & Languages

Auto-Cropper for Art An unsupervised algorithm that detects the edges of artworks in images, and rotates/crops the images to eliminate the background. A writeup explaining the theory and code is available **online**.

Image SVD **Command line utility** for lossy image compression with some artistic distortion effects. Breaks down image matrices into their singular value decomposition.

Languages Ruby (proficient), R, Scala, Javascript, CoffeeScript (competent), Prolog, Python, Matlab (familiar).

Experience

Fall 2013 - Present. **Artsy Inc.** (New York) *Software Engineer*

- Consolidated event stream architecture, streamlined the offline data processing workflow.
- Expanded and maintained the API and other platform services.
- Explored art sales data and implemented algorithmic batch processes.

Spring 2013. **GWU Chemistry Department, Physical Chemistry** *Student Researcher*

- Expedited and simplified equilibrium and kinetic calculations in Cantera with Python.
- Automated molecular energetic calculations in GAMESS with Python.

Fall 2009 - Fall 2012. **GWU Chemistry Department, Cahill Lab** *Student Researcher*

- Computationally modeled crystal structures from single crystal x-ray diffraction data.
- Discovered novel organometallic materials with applications in medical imaging, electro-optical devices, and radiation detection.

Education

2014-2015 **Post Baccalaureate**; Columbia University (New York)

Coursework: Linear Algebra, Machine Learning, Advanced Machine Learning

2009-2013 **BS in Chemistry, BA in Honors English**; George Washington University (Washington, DC)

Thesis: ***The Cognitive and Emotional Neural Processes of Inter-subjectivity***

Honors

- 2013: Sylvia Speck Prize for Exemplary Achievement in English Literature
- 2012: George Gamow Research Fellowship Award
- 2010: Chemical Rubber Company Freshman Achievement Award
- 2006, 2007: Violin: Two time winner of the Golden Key Competition, played in Carnegie Hall NYC