Evan DeSantola

Carnegie Mellon University,
SMC 1249
Pittsburgh, PA, 15213

Tel: 215 279 0317

edesanto@andrew.cmu.edu
evandesantola.com
desantola.com
github.com/evandesantola
devpost.com/edesanto

Best with:

- **C++ 11/14**
- **CUDA**
- **C**
- **Python**
- **SML**
- **Matplotlib**
- **NumPy**
- **SciPy**
- **make**
- **VDB**
- **openMP**
- **openCV**
- **linux & posix**

Great with:

- **Java**
- **Metaprogramming**
- **Go**
- **Excel**
- **Boost**
- **MPI**
- **RAJA**
- **cmake**
- **CUB**

Good with:

- **Visual Basic**
- **Javascript**
- **MatLab**
- **HTML/CSS**
- **Flask**
- **NX**

Tools I love:

- **vim**
- **gdb**
- **git**
- **Visual Studio**

SUMMARY:

I'm an undergraduate at CMU's School of Computer Science (SCS) with a strong mathematical intuition and excellent project management skills. My interests include software engineering, machine learning, analytics, systems, infrastructure, and quantitative research. I'm seeking Summer '18 work.

EDUCATION:

Carnegie Mellon University School of Computer Science (SCS)
B.S. Candidate, School of Computer Science (exp. May 2019, cumulative GPA 3.35; 3.4 within SCS)

HACKATHONS:

HackIllinois: Grand Prize + Microsoft's Best Microsoft Hack + Best Use of Azure, Spring 2016

- ➔ Hack detected Parkinson's Disease using handwriting, speech, and wearable accelerometer data. Designed the stutter detection method and built the entire UX/UI.
- ➔ HackIllinois was the largest student hackathon of Spring 2016.

PennApps: Best Health Hack, Spring 2016

- ➔ Hack targeted diabetic treatment. Created the backend tools, which used deep learning for predicting insulin dosage, and gamified patient compliance through a collective betting system.

BostonHacks: Grand Prize, Fall 2015

- ➔ Hack provided an automated medical line callable from standard phones. Built the web scrapers and text miners that diagnose users' complaints and identify relevant medical information.

WORK AND OTHER EXPERIENCE:

Propulsion Intern, Space Exploration Technologies (SpaceX): Summer 2017

- ➔ Worked in Propulsion R&D on an HPC project that simulates Navier-Stokes on the GPU.
- ➔ Main project added CAD support to a code which previously only handled analytic geometries:
  - Built entire CAD support; maintained existing functionality (SD, brinkman, etc) and added enhanced IC/BC support. Enabled import of geometry, topology and attributes via NX.
  - Designed/implemented **GPU data structures** for efficient storage and query of such info.
- ➔ Side Project 1: Independently discovered and implemented optimization to get a **30% speedup:**
  - Developed a stable version of GPU group-by faster than the existing unstable group-by.
  - Used stable group-by to rewrite calculation of derivatives/BCs to reduce redundant ops.
- ➔ Side Project 2: Integrated Scotch's hypergraph partitioning to reduce **communication** costs.
- ➔ Created/moderated the intern Slack (200+ active members) & organized unofficial intern outings.

Computation Intern, Lawrence Livermore National Lab: Summer 2016

- ➔ Through a competitive selection process, research was accepted into SC16 (via ACM SPS). At the conference, research was **shortlisted for best ACM SRC for Posters at SC16.**
- ➔ HPC research which included harnessing intra-node parallelism and achieving load balancing while also maintaining performance portability -- 12X intra-node CPU speedup.
- ➔ Also worked on a multi-physics toolkit, implementing robust geometric queries, acceleration data structures for meshes and other computational geometry algorithms used in simulations.

Research, Carnegie Mellon University

- ➔ **Computational Biology Department Research, Fall 2016**
  - Worked on bioinformatics research to improve feature selection for cancer genomics model.
- ➔ **Language Technologies Institute, Fall 2015**
  - Coded web-crawlers and data-mining tools to collect/update/process app-data corpus.
  - Helped with development of a model for detecting which apps are often used in sequence.

AWARDS, ACHIEVEMENTS & ORGANIZATIONS & FUN FACTS:

- Microsoft Imagine Cup National Semi-finalist
- Eagle Scout, EMT and former Order of the Arrow Chapter Chief
- MellonHeads, TartanHacks Mentor and TartanHacks 2016 organizer
- Plaid Parliament of Pwning (PPP)
- CMU's Explorers Club

OTHER FUN PROJECTS:

- Co-built tool to detect cataracts in facial images. Worked on facial landmark detection and used Hough transforms to identify pupils.
- Created a tool that virtualizes physical SCRUM boards by taking a video of physical sticky notes. Worked on the computer vision.
- At the Capital One Software Engineering Summit, developed a hack to detect early onset dementia using fuzzy c-means clustering.