



# Yeshiva College Department of Computer Science

2019-2020 Report



# Program Overview



# Tracks: 2 B.S., 1 B.A.

- **B.S. tracks (roll out completed in Spring 2020):**
  - designed to prepare students to directly enter the job market.
  - have more C.S. requirements, fewer non-C.S. requirements.
- **Distributed Systems, a.k.a. Cloud Computing** (B.S., 4 years, 20 courses)
  - Foci: general software engineering, cloud computing (creating the cloud), security
- **Data Science** (B.S., 4 years, 22 courses)
  - Foci: Machine Learning, Artificial Intelligence, Natural Language Processing, etc.
- **B.A.** (3 years, 14 courses)
  - Foci: general software engineering
  - **Grad school strongly recommended**



# Student Numbers

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- **61 students continuing from previous semesters, 57 of which are in B.S. tracks**
- **66 students currently (Fall 2020) taking Intro to CS**



# Results



## Results: Y.C. C.S. Class of 2019-2020

- **26** total graduates from Sept. '19 through May '20.
- **4** going to semicha, **2** going to C.S. graduate school
- Of the remaining 20, **18** had jobs upon graduation



# Results: Full Time Offers

- Amazon x8 \*
- Google x3
- Facebook
- IBM
- GameChanger
- HubSpot
- PTC – Onshape
- QuadPay
- Bloomberg x3
- Broadridge x2
- Capital One x2 \*
- Citi x2
- Accenture \*\*
- BNY Mellon
- Deloitte
- Prudential Financial
- TD Securities
- U.S. Bank

\* 1 overlap with Google offers

\* 1 overlap with Bloomberg, 1 with Deloitte

\*\* 1 overlap with Citi



# Results: Accepted Base Salaries (have data on 16 of 18)

Salary Range	Number of Students
\$80,000 - \$89,000	1
\$90,000 - \$99,000	1
\$100,000 - \$109,000	4
\$110,000 - \$119,000	6
\$120,000 - \$129,000	3
\$140,000 - \$149,000	1

- This does not include signing bonuses or stock options
  - Signing bonuses: \$0 - \$48,000. Stock options: \$0 - \$80,000
- Many/most surveys radically understate salaries because they lump help desk, network support, etc. together with software engineers
- Long Term Upper bound: "Island money"



# Registration Growth

	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
<b>Total Registration in C.S. Courses</b>	210	210	238	287	380
<b>Year over Year Increase in Total Registration</b>	NA	0.00%	13.33%	20.59%	32.40%
<b>Intro to C.S. --&gt; Data Structures Rate</b>	1 out of 6.6	1 out of 1.5	1 out of 1.03	1 out of 1.26	1 out of 1.34
<b>Unique Students Beyond Intro to C.S.</b>	42	53	65	69	102
<b>Year over Year Increase in Unique Students</b>	NA	26.19%	22.64%	6.15%	47.83%
<b>Total Registration Increase (2019-20 vs 2015-2016)</b>					<b>80.95%</b>
<b>Unique Students Beyond Intro Increase (2019-20 vs 2015-2016)</b>					<b>142.86%</b>



# Testimonials



## **Dr. Anton Riabov (Chief Architect, Office of the CTO at Logitech)**

I think the program you built is really interesting and unique, and it's just great to see something so very well done...I hope some of your students will be interested in applying for jobs or internships at Logitech!

## **Brendan Collins, Google HR**

The two B.S. in Computer Science programs at Yeshiva provide what most colleges can't, which is experience with subject matter that prospective employers are increasingly working in...



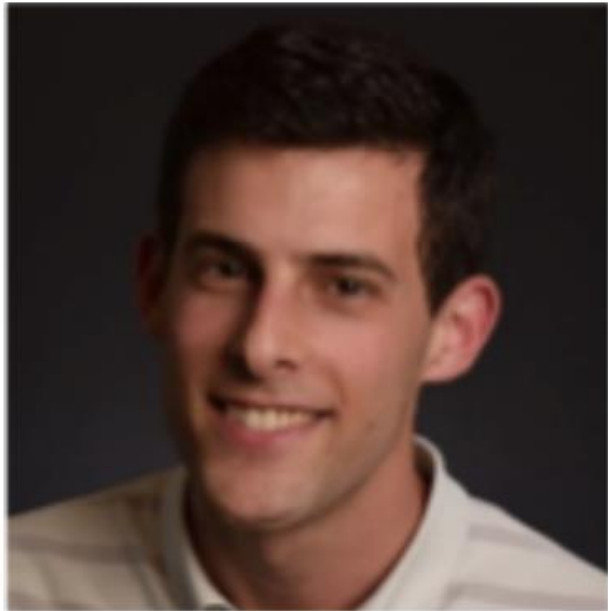
## Isaac Scheinman (Amazon)



I could not be happier with my experience over the last four years. The teachers were flexible, extremely open to feedback and, more than anything, caring about their students' success. I have found that I was able to cultivate close, personal relationships with a number of the teachers in the department, which has made the experience all the more meaningful. I was also lucky enough to "go through" this—with all the ups and downs, hard classes and challenging workload—with an amazing group of guys who have become very close over our time together. Aside from having a whole group of smart, motivated workers to study with, I felt like I had a strong emotional support system to help me through the toughest parts of college. I am extremely thankful for everything I gained from the major, culminating in an amazing job that I am proud to have lined up!



## Micah Hyman (Amazon, RIETS)



Every work experience I have had reinforced my feeling that my education has been superb. I feel prepared for the next step and am so thankful to all my professors! (Experience to date: SAS, Edmunds.com, Chrome River)



## Moshe Rosensweig (RIETS)

I loved the major and the surmountable challenges it provided. Under this new curriculum, we were pushed far beyond our limits...[Our professors] had very high expectations for us and demanded excellence. Although it was difficult, I grew a lot and very quickly; by the end of the summer, I had impressed [the CEO at my internship] so much, he gave me a job offer to return after I graduate. I know that I wouldn't have been able to accomplish the tasks they assigned me were it not for the strong foundation my teachers provided me.





# Events



# TechUCation, Sept. 25: Mitch Cohen, Senior Software Engineer at Google



After decades and 16 patents at **IBM Research**, working on distributed transactional databases, e-commerce, Industry Solutions and distributed data flow processing, Mitch Cohen ventured out into the real world. He became the lead developer for **Two Sigma's** proprietary language and engine for time series data analysis. Mitch then moved on to **Google** where he uses pipelines to aggregate data to create music profiles for billions of YouTube users.



# Military Medicine R&D in Israel – Nov. 20



- **Military Medicine at The Hebrew University of Jerusalem: The Strategic Partnership**
- The joint Institute for Research in Military Medicine (IRMM) of The Faculty of Medicine of The Hebrew University and the IDF Medical Corps.
- **Highlights of the Military Medicine Program of The Hebrew University will be presented including recent advances in novel treatments and technologies.**

- **Prof. S. David Gertz, MD, PhD, LTC (Res.)**

- Director, Military Medicine Track and Institute for Research in Military Medicine
- Advisor to the IDF Surgeon General for Victim Identification
- Professor of Anatomy and Cell Biology
- YC Alumnus



# Nov. 26 Guest Lecturer: Joshua Rapps, Bloomberg



- **YC Class of '79.** MBA from CUNY - Baruch.
- **AT&T Bell Laboratories (1982)**
  - Contributed to various releases of the **UNIX** operating system, rising to Distinguished MTS and Manager of the Development Systems Team.
  - Designed and implemented various parts of **the C library**, including the I/O and memory management components.
- **Bloomberg LLP (2002)**
  - Worked on **high-volume transaction systems** as a senior software engineer and team leader
  - **Lecturer and technical trainer for Bloomberg's internal developer training program.**



# December – Guest Lecturer – Cloud/IoT



- **Dr. Anton Riabov is a Chief Architect of Cloud and Data Platforms in the CTO Office of Logitech Corporation**, where he helps develop IoT cloud platforms, data analytics and other systems for Logitech brands.
- Prior to taking the position at Logitech, he was a researcher at IBM T.J. Watson Research Center, where he worked on developing Big Data middleware systems and developed new AI methods to simplify data analysis.
- He has over 30 patents, publications in AI conferences, and has received multiple IBM awards for his work. He has a Ph.D. degree in Operations Research from Columbia University.



# Faculty



# Faculty Statistics

- **75+ years of full-time corporate experience** across Barclays, Bell Labs, Goldman Sachs, Google, IBM, Intel, Microsoft, Millennium Partners, Motorola
- **37 issued U.S. patents**
- **100+ publications**
- **100% Focused on Student Success**



# Judah Diament

Professor, Department Chair



- **IBM T.J. Watson Research Center: 2000-2014**
  - **Patents:** 14 U.S. patents issued
  - **Publications:** 5 conference papers, 1 journal article
  - Impacted multiple IBM software products, including shipping code
- **Goldman Sachs: 2014-2016**
  - Vice President, Finance Engineering
- **Alumnus of Y.U., N.Y.U. (M.S. in C.S.), R.I.E.T.S.**
- Judah's [LinkedIn page](#)



# Richard Dutton, Adjunct Professor of Machine Learning



- **Richard Dutton is the head of machine learning for corporate engineering at Google.**
- **Teaches two courses in YC: Machine Learning and Data Science Applied**
- **Prof. Dutton's professional background:**
  - **Google: Dec. 2017 - Present** Head of Machine Learning for Corporate Engineering
  - **Millennium: 2017** Head of Data Analytics and Cloud Application Development
  - **Barclays: 2005-2014** Director; Head of Rates Technology Asia
  - **Microsoft: 2000-2001** Speech Recognition
- Rich's [LinkedIn page](#)



# Van Kelly



- **PhD, Computer Science, Rutgers: 1985**
- **Bell Labs: 1993-2001**
  - Distinguished Member of Technical Staff
- **Motorola: 2006-2010**
  - Senior Member Technical Staff
- Van's [LinkedIn page](#)



# Avraham Leff



- **PhD, Computer Science, Columbia University: 1992**
- **IBM T.J. Watson Research Center: 1991-2017**
  - **Patents:** 21 U.S. patents issued
  - **Publications:** 45 conference papers & journal article
  - Impacted multiple IBM software products, including shipping code
- Avraham's [LinkedIn Page](#)



# F. Patricia Medina



- **PhD, Mathematics, Oregon State: 2014**
- **Brown University:** Visiting Postdoctoral Scholar, ICERM, Computer Vision.
- **NSF and Microsoft Corporation** have both funded her research
- **More than 15 years of teaching experience.** Held various academic positions in several institutions including WPI, Universidad Central de Venezuela, Universidad Simon Bolivar and Oregon State University.
- **Talks & Publications:** More than 40 talks in seminars and national and international conferences, 7 papers, 1 paper is preparation, 7 posters.
- Patricia's [LinkedIn Page](#)



# Avi Rosenfeld, Adjunct Professor of CS



- **PhD, Computer Science / Artificial Intelligence, Bar Ilan: 2007**
- **Associate Professor, Machon Lev, Jerusalem**
  - Head of Data Science Program
  - Publications: 80+
  - Patents: 3
- **One of four member of Israel's Education Counsel responsible for judging all academic degrees in Data Science**
- **Alumnus of MTA, YC, RIETS, Azrieli**
- **Avi's [LinkedIn Page](#)**



Ben Wymore



- **Joining us this Fall!**
- **M.S. in C.S., University of Minnesota: 1997**
- **Intel Research: Software Engineer**
- **Crestron Electronics: Senior Software Engineer & Team lead**



# More Information



# Industry Advisory Board Members

- **Dr. Henrique Andrade: CTO of Unscrambl**
- **Karthic Bala: Condé Nast** Head of Data Strategy
- **Dr. Erick Brethenoux: Research Director, Gartner**; adjunct professor, Stuart School of Business at Illinois Institute of Technology
- **Steve Demuth: CTO, Mayo Clinic**
- **Aaron Frazer: Manager**, product data analytics team, **Facebook** Tel Aviv
- **Dr. Aliza Heching: Research Staff Member** at **IBM** Research
- **Dr. Jonathan Hosking: Senior Research Scientist, Amazon**
- **Paul McGregor: Managing Director & Technology Fellow, Goldman Sachs**
- **Dr. Howard Morgan: Co-Founder, First Round Capital**
- **Dr. Claudia Perlich: Senior Data Scientist**, at **TwoSigma**
- **Dr. Kavitha Srinivas: Research Staff Member, IBM Research**
- **Dr. Joel Wein: Technical Lead/Manager**, Foundations of Storage, **Google**



# Non-CS Requirements

## B.S. Tracks: 8 Non-C.S. Courses

1. First Year Writing
2. 2 AJS classes *of your choice* (BIB, JHI, JST, or JTP)
3. Choose from Contemporary World Cultures (COWC) *or* Cultures Over Time (CUOT)
4. Interpreting the Creative (INTC)
5. Human Behavior and Social Institutions (HBSI)
6. 2 Electives: **any** YC course other than CS or math

## B.A. Track: 12 to 14 Non-C.S. Courses

1. **Between 1 and 3** Hebrew Language Courses
2. 1 Jewish History
3. 1 Jewish Thought and Philosophy
4. 1 Bible
5. 1 More AJS Course
6. First Year Writing
7. WI, Writing Intensive
8. Choose from Contemporary World Cultures (COWC)
9. Cultures Over Time (CUOT)
10. Interpreting the Creative (INTC)
11. Human Behavior and Social Institutions (HBSI)
12. Natural World (NAWO)



# More Information

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[Requirements / Program Details](#)

[Frequently Asked Questions](#)

[diament@yu.edu](mailto:diament@yu.edu) if you have any additional questions