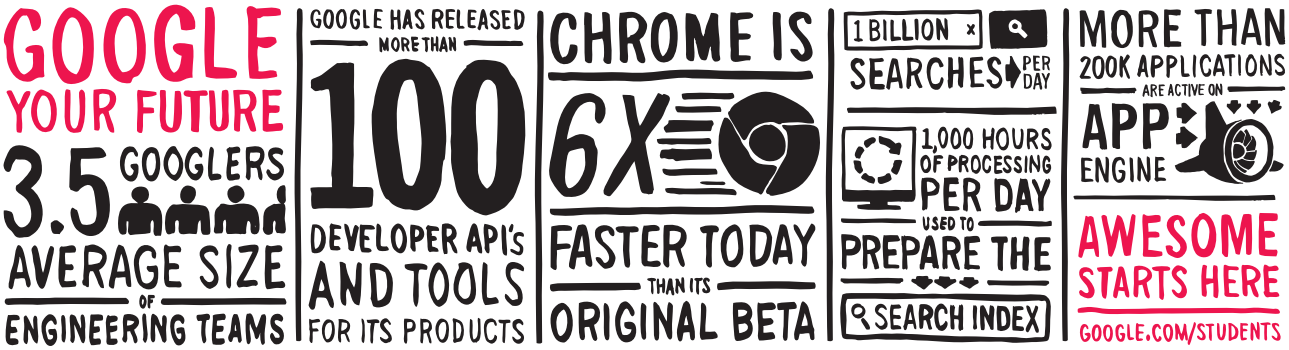

Research at Google

"Google is not a conventional company and we don't intend to become one." - Larry Page, CEO, Google

Google is full of smart people working on some of the most difficult problems in Computer Science today. Many of our engineers have PhDs and come from a research background - but we don't see the theoretical and practical as being mutually exclusive. That's why research happens across the company, on many different teams, making the line between research and development at Google wonderfully blurred.

Most people know about the research activities that back our major products, such as search algorithms, systems infrastructure, machine learning, and programming languages. Those are just the tip of the iceberg; Google has a tremendous number of exciting challenges that only arise through the vast amount of data and sheer scale of systems we build. What we discover affects the world both through better Google products and services, and through dissemination of our findings by the broader academic research community. We value each kind of impact, and often the most successful projects achieve both.

We embrace our mission by hiring smart people to help us organize the world's information to make it universally accessible and useful.

Quick Facts

~ Over 25% of engineers at Google have PhDs
~ Google supports over 100 academic and industry conferences each year, across many different domains of Computer Science
~ Each year over 20 Visiting Faculty come to Google for extended periods of 6 months - 1 year to explore projects at industrial scale
~ Google provides funding for over 200 research awards each year, to universities across the globe

"We can be academics, researchers, and developers -- sometimes all in the same day. But at the end of each day, we're simply well-educated, thoughtful individuals who like solving hard problems and improving everyone's lives."

- Brian Bershad, PhD, Director of Products & Engineering

"We publish hundreds of research papers a year and strongly encourage researchers to publish papers, not because we have to; but because we want to. Google products have been an excellent source of research-relevant problems, sustained by the strong culture of innovation. We publish because we personally value the benefit of participating in the research community."

- Matt Welsh, PhD, Software Engineer

Google™

"When the bank robber Willie Sutton was asked: 'Why do you rob banks?,' he allegedly said: 'Because that's where the money is.' I'm at Google because that's where the data is. I looked around for the best place where there was real action in my field and found Google was the place to be."

- Peter Norvig, PhD, Director of Research

Available Opportunities

Software Engineer, PhD New Grad - North America Locations
Software Engineer, PhD New Grad - Multiple European Locations

Software Engineering Intern, PhD, Summer - North America Locations
Software Developer Intern, PhD, Summer - Montreal

Learn more at
google.com/students/phd

Examples of Projects Developed by PhDs at Google

Infrastructure

Project Dremel is a system for querying very large (terabyte- to petabyte-size) data stores at interactive speeds. It exploits column-oriented data store and massively parallel scanning. It is used by thousands of Googlers a month and allows us to do ongoing research to expand expressiveness of the query language, performance and flexibility. VLDB 2010 Paper: "Dremel, Interactive Analysis of Web scale Datasets"

Chrome

The Chrome App Isolation Project uses Chrome's multi-process architecture to more securely protect websites that have sensitive user data. It's like using a separate browser for your bank website, which can actually block many types of cross-site attacks (such as XSS or CSRF). If a person logs into his or her bank site with its own browser, its cookies and data aren't accessible to attackers. This same idea is being applied to individual websites within a single browser, by partitioning their in-memory and stored data. These "isolated apps" will be better protected against many types of attacks.

GeoCommerce

The Google Maps team released the MapsGL project, which implements computer vision algorithms to support true 3D transitions between satellite, oblique aerial views, and Street View. Along the way, they developed new pose optimization and 3D reconstruction algorithms that run at massive scale on much of the world's imagery. They also created the Face Movies feature in Picasa, which was written by a PhD intern during his 10 week internship, inspired by the work of a postdoc.

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