

# Alex Gartrell

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## About

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I've been working on low-level networking and systems projects at Facebook since 2011. Prior to that I obtained a B.S. in Computer Science from Carnegie Mellon and had internships at Cisco Systems and Fog Creek Software. I've programmed extensively in C++, C, and Python.

## Work: Facebook (2011 - Present)

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### Kernel Team

- Built and upstreamed IPv4-in-IPv6 forwarding and ICMP scheduling for linux's ipvs.
- Wrote gnlpy -- an open source python netlink library for configuring IPVS
- Designed and Implemented Facebook Virtual Connect, a multi-homed VPN for Facebook Services out on the Internet.

### Traffic/CDN Team

- Started the Facebook Network Appliance project for in-ISP CDN caches
- Implemented first caching client for layer 7 load balancer proxygen.
- Designed and Implemented on-SSD cache for large CDN objects.

### Memcache Team

- Built cross-region encryption for the caching stack on top of OpenSSL.
- Designed and Implemented Facebook's out-of-order caching protocol (umbrella). Today, billions of messages per second are sent over this protocol.

## Education: Carnegie Mellon (2007 - 2011)

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- B.S. in Computer Science
- Graduated with a 3.65 GPA as well as College and University Honors
- TAed the 200-level Computer Systems course and 300-level Software Engineering course 3 and 2 times respectively.

## Past Open Source Contributions

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**Mongrel2 (2010 - 2011)**

**Chromium (2010)**

**Mozilla Firefox (2009)**