Charles Ferguson
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Independent Study
Dr. Baumstark

My Internship at BitPay

This Fall I continued my internship at BitPay. BitPay is a Bitcoin payment processor for merchants. They allow merchants to offer Bitcoin as a payment method, but still get paid in Fiat if they choose. BitPay also offers payroll services, and integration tools including a point of sale mobile app.

In my time with BitPay I've learned a great deal about Web and Mobile development. After a year and a half of working here, I can confidently consider myself a veteran Node.js developer. Node.js, the technology we use, like Bitcoin is still in its infancy. It's initial release was in 2009. Only 5 years later there are many large companies that are using it including Yahoo, Uber, PayPal, and LinkedIn. Node.js applications are written in JavaScript and run on the Node.js runtime on all major platforms. It is very convenient when all your code is written in JavaScript instead of juggling 2 different languages pairing JavaScript with something else on the server like Java C# or Ruby. Why not just do everything with JavaScript? The Node.js community is rather small, yet there is a great demand for Node.js developers, so it's a good skill to have.

Another obvious batch of knowledge I've acquired in my time here has been of Bitcoin. When I started here in May of 2013, most people I knew had never heard of Bitcoin. I was in a tiny office with 5 other people, and only one of 3 developers for the company. We were the typical startup. In April of 2013 the value of Bitcoin had tanked, and many people were anticipating the demise of Bitcoin. Most of BitPays merchants were small mom and pop businesses looking for new technology to be on the cutting edge, or following the Libertarian movement. Today many large companies are embracing Bitcoin, like Newegg, Overstock, Virgin Galactic, and Expedia to name a few, and the value of Bitcoin is healthier than it's ever been. BitPay now has around 100 employees. We take up an entire floor in our building in Atlanta, and have offices in Amsterdam, Argentina, New York, and San Fransisco. We've brought on many massive companies into the Bitcoin space. By the time you'll read this you'll also might have heard the news that Microsoft is now accepting Bitcoin. These are very exciting times for Bitcoin. So what makes it such an exciting technology?

The internet was a wonderful advancement in computer science, and for civilization in general. The internet brought us freedom of information. We could not imagine life without it. It has seeped into every crack and crevice of our lives- communication, social networking, eCommerce, finances, education; even our refrigerators are hooked up to the internet. However the internet had its skeptics in the early days. To quote Newsweek from the early 90's- "Do our computer pundits lack all common sense? The truth in no online database will replace your daily newspaper, no CD-ROM can take the place of a competent teacher and no computer network will change the way government works…". 30 years ago to think I could send a live video message instantly to someone in China for free would have been unheard of. Now thanks to Bitcoin we can send money to someone in China for free without any 3rd

party sticking their paws in our pockets. The internet brought us freedom of information. Bitcoin brings us freedom of money.

However it's not just the money part that makes Bitcoin so interesting. It's the technology it depends on- the blockchain. The blockchain is a mechanical drive chain- a distributed transaction database. Bitcoin exists as a distributed ledger on the blockchain. The blockchain uses private/public key cryptography for proof of ownership, and verifies each transaction with blocks. Since the blockchain is decentralized it cannot be controlled, modified, or destroyed by any central authority. The blockchain is absolutely transparent allowing anyone to view every single transaction ever made, yet private, where addresses are not associated with any individual on the blockchain, but in the private records of companies and individuals they transact with. There are limitless possibilities of things that can be improved by decentralizing with the blockchain. For example, there are companies using the blockchain for decentralized web storage; an alternative to Dropbox that's 100 times cheaper.

Working at BitPay has been a tremendous opportunity for me. I've learned about alot of exciting new technologies. Being a part of a development team that lasts longer than a single project has been very eye opening to what it's like being a software engineer. I'm excited to graduate and continue working for BitPay as a full time software engineer. Next time you're at Bobby Dodd Stadium paying for your hot dog and soda at the concession stand with bitcoin- when you see the Bitcoin Checkout app on the iPad at the register and you hear the iconic 'ding', you'll be able to say, "one of my former students made that".