Niels van Eck
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I am a generalist with a passion for quality and penchant for digging deep. I like to get to the root of problems and help those around me understand and overcome challenges.

Financial backend software has been a thread throughout my career, but because of a strong interest in energy and a desire to help fight climate change, my goal is to find an exciting position in the renewable energy / clean tech sector.

2020–Present: Smallstep Labs, San Francisco, CA
Smallstep Labs, a digital identity startup, hired me to build a subscription billing solution. I proposed and developed a Stripe implementation in Python/Django that exposes a GRPC API to Smallstep's microservices. In follow-up projects I helped set up data reporting using Zeppelin and Terraform. I also laid the dev-ops groundwork for building Cloud Dataflow jobs.

- Designed and implemented an internal gateway to Stripe in Python/Django with full support for Customer and Subscription management. This implementation currently supports products with both a metered- and licensed subscriptions.
- Implemented a license-seat count reporter in Golang.
- Automated read-only PSQL cluster provisioning on Google Cloud Platform (GCP) using Terraform.
- Automated Dataproc / Zeppelin cluster provisioning (incl data source config) on GCP using Terraform.
- Refactored Terraform configuration to automate workspace specific variable configuration (relieving the need to specify tfvars files).
- Created a framework for writing, organizing and deploying Apache Beam / Cloud Dataflow jobs, written in Python.
- Trained the team on Zeppelin, Google Data Studio and Apache Beam / Cloud Dataflow usage.
- Designed and implemented an event driven CRM integration built using Python, protocol buffers, Cloud Pub/Sub, Apache Beam and Cloud Dataflow.
- Introduced an internal Python library with automatically generated protocol buffer Python code which is shared across multiple Python repositories.

2010–2018: Twitter Inc., San Francisco, CA
I was initially hired to work on user support applications. When Twitter started building its promoted products in 2010 my team was asked to focus on advertiser and sales support tools. My background in financial software landed me the task of building the revenue processing pipeline, the engine that turns ad clicks and views into aggregated data used for invoicing and financial reporting.

As the business grew, financial backend software became the responsibility of an entire team. I became its technical leader and was promoted to Staff Software Engineer. I worked on a variety of projects and systems, ranging from IPO preparation to scaling revenue processing for handling upwards of a billion dollars in annual revenues, to automating financial reporting and credit card charging.

2015-2018 **Staff Software Engineer / Tech Lead, Revenue Processing Team**

- Designed and implemented a double sharding mechanism in the Java/MySQL based billing system to handle an order of magnitude increase in volume of chargeable events resulting from the introduction of video ads. Double sharding allowed for uniform storage across database clusters for reduced write loads, while maintaining processing-optimized storage inside of each cluster for efficient reading. (Java, MySQL, Mesos / Aurora)
- Proposed and implemented a model for selling, configuring and charging video advertisement spots to be shown by Twitter using live-streamed NFL games.
- Maintained and improved a Java based credit card charging pipeline.
- Wrote internal tools to audit account charge calculations and perform internal support. (Java,

MySQL, Jetty, Mesos / Aurora)
- Proposed and built a mechanism that allows ad agencies to set and self-publish custom budgets (IOs) to one or more Twitter handles for use in ad campaigns. (Scala, MySQL)
- Lead on-call process through weekly incident review meetings, team training, root-cause analysis and documentation / software improvements (Jira / Confluence)

2013-2015 **Senior Software Engineer / Tech Lead, Billing Team**
- Co-designed and built the 2nd generation ad engagement pipeline for storing ad engagements, performing daily aggregation and budget capping using Java and MySQL. (Java, Thrift, MySQL, SQL, Internal ETL Tools, Mesos / Aurora)
- Proposed and built a standardized API integration / Twitter handle onboarding flow with several ad syndication partners which enabled authenticated API driven advertising on 3rd party handles to be billed to a single advertising agency. (Ruby, Rails, Sinatra, core later migrated to Scala, MySQL, Mesos / Aurora)
- Maintained and improved a web service for Insertion Orders from Salesforce to Twitter's ad system. (Ruby, Rails, SQL, Salesforce)
- Designed and implemented changes required for SOX compliance to the revenue processing pipeline and adjacent systems to prepare for Twitter's IPO.
- Created and maintained a reporting pipeline used for quarterly SEC filings. (Vertica, SQL)

2010-2013 **Software Engineer, Revenue Team**
- Designed and built Twitter's first ad engagement revenue processing pipeline which provided daily aggregated sums of amounts to be charged to advertisers based on Twitter users' interactions with ads, capped based on advertiser-set daily-, and contracted-, budget limits. (Ruby, Pig, Protobuf, MySQL)
- Built reports that were used to invoice advertisers and generate corporate financial statements. (Ruby, Rails, SQL)
- Built ETL pipelines and reports used for promoted trend billing and calculating revenue share payouts to advertising syndication partners. (Ruby, Rails, SQL)
- Wrote Tweet 'search and result' highlighting for Twitter's stand-alone Tweet archive viewer. (JavaScript, JSON)
- Enhanced internal ETL Tools so individual ETL configurations could be tested automatically. (Java, YAML, SQL)

2010 **Software Engineer, Support Tools**
- Developed and maintained support tools for user services agents, integration with the Zendesk ticketing system and a Content Management System for the Twitter help pages. (Ruby, Rails, MySQL, Zendesk API, SSO)

2008–2010: Web Engineer, Apps Team, Cooliris. Palo Alto, CA
Cooliris was a software company focused on evolving the experience of media on the web through browser plug-ins and mobile phone applications. My main responsibilities were the development, maintenance and deployment of internal and customer facing web properties as well as third-party-content integration modules for the browser plug-in.

2001–2008: Software Engineer, Billing Mgmt Team Lead, Tangoe. Orange, CT
Tangoe rose from the ashes of the dot com boom by offering Enterprise Software focussed on Telecom expense savings. This was in the days when offices were full of landline phones with expensive long distance plans, complicated contracts and a myriad of ways to over-pay. Tangoe's software automatically read invoices and compared them to contracts to point out possible savings. Customers wanted automatic cost allocation and accounting system integration, which is what I focussed most of my tenure at Tangoe on.

2000–2001: Intern Programmer, The Allied Group. Glastonbury, CT
Software development in various consulting engagements. Wrote an in-house JSP/Servlet based web application framework.

Education
B.S., Software Engineering Saxion Hogeschool Enschede, Enschede, The Netherlands, February 2003