

SERG BUSLOVSKY

SOFTWARE ENGINEER

☎ (650) 960 6575

in [linkedin.com/in/sbuslovsky](https://www.linkedin.com/in/sbuslovsky)

✉ serg.buslovsky@gmail.com

🏠 San Francisco Bay Area

PROFILE

Experienced engineering leader with a broad spectrum of expertise: mobile, embedded, server and machine learning. Proven track record of building and deploying systems to production, solving hard problems in challenging conditions. Passionate about applying the latest advances in technology to real-world problems.

EDUCATION

BACHELOR IN CS
Kyiv National Shevchenko
University, Ukraine

SKILLS

// Languages

Java
C/C++
Python
PHP
Shell scripting

// ML & CV

OpenCV
Caffe2
TensorFlow

// Mobile

Android SDK
Android NDK, JNI
Gradle

// Java & backend

Netty
Apache Avro
JUnit

// Persistence

MySQL
SQLite
Redis
Memcache

PROFESSIONAL EXPERIENCE

Clover | 2013 – Present | <https://www.clover.com>
Principal Engineer, Manager

Joined the company at an early stage (under 20 employees) and contributed to many different areas of the software stack.

Key achievements (in chronological order):

- Designed and implemented a Push Notification Server to deliver notifications from backend servers to Android- and web-based clients (*Netty, Redis, SSE, Websockets*).
- Built backend infrastructure for Clover App Market system that manages the delivery of applications (built internally and by 3rd party developers) to a fleet of Android devices (*REST, Bouncycastle, database design*).
- Developed Barcode Recognition System (UPC,QR) for Clover custom hardware - detector was implemented using Android NDK, running barcode localization and recognition pipeline in native, wrapped with a JNI bridge to Java and AIDL interface for clients (*OpenCV, BLaDE, ZXing*).
- Implemented integration layers with multiple payment acquiring systems (*SOAP, XML, Apache CXF, JSON*).
- Lead the design and implementation of Clover Secure Payments application - essential functionality for Clover Terminals allowing acceptance of card-present payments (chip, contactless, magnetic stripe).
 - The system consists of an Android application that implements UX for the customer and an additional secure application written in C and executed on an additional microcontroller(ARM-based) running FreeRTOS.
 - Secure application interfaces with ICC, NFC, and MSR drivers, executes EMV and Contactless L2 kernels and performs encryption (RSA, 3DES).
- Played a pivotal role in achieving EMV, Contactless (Visa, MasterCard, Amex, Discover, Interac, JCB) and PCI PTS certifications for Clover terminals that allowed launching Clover Mobile, Mini, Flex and Station products.
- Demonstrated ability to jump into unknown domains, collaborate with cross-functional teams to deliver on mission-critical projects.
- Contributed to international launches of Clover in UK, Ireland, Germany, Austria, Canada & Argentina.
- Lead implementation of a project to enhance the availability of the payments processing cloud system by extracting the critical payments processing components from a monolithic server into a dedicated scalable microservice.
- Built a team of engineers working on core payments infrastructure in Clover HQ, trained multiple regional and international teams.

(continued on next page)

INTERESTS

Aviation

Travelling

Ticket To Ride Score Calculator app | 2018 – Present | <https://serg.buslovsky.com/ttrsc/>
<https://play.google.com/store/apps/details?id=com.buslovsky.ttrsc>

Built an Android (iOS version soon to be released) application from an idea all the way to production deployment.

The app is applying Machine Learning and Computer Vision technology to solve a problem with a popular board game Ticket To Ride.

Score computation at the end of the game is very tedious - the app allows users to take a picture of the game board with their phone's camera and computes the score automatically by recognizing board game elements in the picture using a Convolutional Neural Network.

The app was accepted extremely well by the board game community and was downloaded by over a thousand people in the first 2 days following the launch announcement.

It currently holds an average 4.5 rating in Google Play Store.

Key aspects of the implementation:

- Recognition model has been trained on pictures of the game board with various player positions gathered manually.
- Custom data management tool allows labeling contents of the images and generating an LMDB database with samples for training / testing (*Python, OpenCV*).
- Trained a flavor of DenseNet using Caffe2 framework; full-dataset training executes on an AWS EC2 instance.
- Android application contains native C++ components that link Caffe2 and OpenCV libraries (*Android NDK*).
- Trained model weights are stored as assets in APK and loaded into the native component to initialize Caffe2 network.
- For a given image, the app extracts subimages of various points of interest in the picture and feeds those into a pool of recognizers that use native Caffe2 networks for recognition parallelly (*JNI, Multithreading*).
- Based on the classification probability, uncertain results are presented to users for verification/adjustments.
- Results of the verification/adjustments are sent into cloud storage and further used to retrain model on additional data (*Amazon AWS*).
- Localization of the game board in the input image is performed using AKAZE feature matching; parts of the input frames are sent to localizers to perform feature mapping efficiently on camera preview signal (~100ms per frame).

RecycleBank | 2012 – 2013 | <https://www.recyclebank.com>

Software Engineer, Manager

- Lead software engineering efforts to maintain and enhance company's technical solution based on heterogeneous stack (*LAMP, Ruby/Rails, Jav*).
- Implemented from scratch internal testing toolset built using Symfony Framework.
- Provided expert guidance on extending and optimizing Magento platform.
- Provided architectural and technical guidance to product development.

OnTap | 2010 – 2011 | <https://www.ontapgroup.com>

Software Engineer

- Hands-on development for the agency's numerous client ecommerce solutions based on Magento Platform.
- Implemented multiple Magento Extensions that were later reused in many new client installations.

SmartyMedia | 2006 – 2009 | <http://smartymedia.biz>

Software Developer