The Official White Paper for SparkPark
Parking Services

Finding You That Perfect Spot

By Brian Aarhus, Noah Betzen, Ben Walker
Executive Summary

Of the over three-hundred million Americans residing in this glorious country, most of those use their own private vehicles for transportation. Many agree that Americans spend a lot of time driving, but they tend to forget about the process of parking.

Industry-Wide Problem

If you own a car and/or drive regularly, you are no doubt familiar with the agonizing task of trying to find a good parking spot. No matter your profession, age, or interests, you are not immune to this. You know where you need to go; you know what you want in life. You should enjoy the same confidence with where you can park. Finding parking is your problem; SparkPark is your solution.

Conventional parking practices are filled with inefficiencies:

- They rely on confusing signage to convey parking schedules and shifting rates.
- Users have to drive down every lane of a large lot to find parking
- Users have to make sure to keep correct change with them, take the time to fill the meter, and remember to refill the meter when time is running out
- A parking service ticketer has to check each and every meter or parking pass to issue a parking ticket

Existing Solutions and Drawbacks

The most traditional way to prevent motorists having to look for parking is the valet system. This system employs designated persons to park your car for you. This system can be really fast for the user but can become bottlenecked with more motorists than valets. Other drawbacks include the typically high expense of paying for the valet service as well as the lost privacy and safety that comes with someone else having access to your vehicle. The valet system is expensive to implement and only works for lots that are nearby and include reserved slots. Implementing this kind of system on a
university campus would be an expensive nightmare as each building in the campus would have to have multiple valets.

Designated spots for employees or upper management is a way to cut down on the inefficiency of work-time reduction due to parking problems. Higher paying users could be able to park in special lots close to popular buildings (on a campus) or entrances (for the workplace). These designated spots are great for the people using them, but also lead to overcrowding the public parking lots. This overcrowding can have a negative effect on the availability of spaces in the designated parking lots if some public parkers wish to take their chances of getting a parking ticket. This method can be inefficient if the number of designated motorists is nearly equal to the number of parking spots as those lots might not be filled most of the time, yet every other public lot is filled to capacity.

---

**New and Improved Solution**

The SparkPark system replaces the inefficiencies inherent in traditional parking techniques and ushers parking into the digital age. Why fumble with coins when you can pay the meter electronically? Why spend half an hour searching for the perfect spot when you can immediately locate a nearby open space? We address these problems and more with our SparkPark mobile app and SparkPark Commercial Parking Solutions system.

First, our system will be implemented by businesses and universities across the country that are concerned with parking efficiency. Our commercial system allows these companies or organizations to monitor and collect real-time data and create trend logs in the software. This enables our customers to determine which parking lots are most trafficked, earn the most money, etc. to increase their parking efficiency and revenue.
SparkPark’s powerful data acquisition and manipulation tools are perfect for any system regardless of parking needs, but especially if one has to manage over-crowded lots or is looking for data to support building new parking lots. With real-time data being transmitted to SparkPark servers and then to mobile users, SparkPark is a boon for businesses. It could flatten peak parking hours to average out and from there, even possibly increase the number of customers visiting the business, resulting in a more manageable and less stressful workflow for your employees, as well as increasing customer satisfaction.

SparkPark is a great asset to our commercial customers, as well as to our mobile app users. SparkPark is loaded with features to make our mobile users happier and more productive. They will no longer have to spend excess time searching for a spot because our app will immediately display which lots have open spots in our navigational map interface. Each lot will have parking information associated with it, so our users can easily be informed of the rates and hours of the lot. Once parked, the users simply have to tap on the spot they have taken and they can pay the meter electronically either with PayPal or by entering their payment information manually in their account.

To convenience users, a timer automatically starts when they pay to warn them when they need to feed the meter again. To make SparkPark have more of a community feel with even more information, we enable users to mark down for how long they will be parked (default is for how long the meter is paid), so that other users know when parking will most likely open up. SparkPark users will also enjoy the ease at which they can pay parking tickets, since tickets are automatically linked to their SparkPark account.
Case Study

A simple SparkPark prototype was implemented for the UAF campus. A selection of students, staff, and faculty were asked to participate in a study in which they used said prototype to optimize their time spent finding parking. Part of the study included applying stress monitors to the participants in order to gauge the difference in their stress levels when finding parking. In this study, none of the fifty participants expressed dissatisfaction with SparkPark. Even those participants with gold decals said that SparkPark helped them more easily identify where parking spots were, even if they were already guaranteed to find a spot in their given lot.

After the study, there was a noticeable reduction in the stress levels of the motorists in the study. Each participant experienced a reduction in blood pressure, heart rate, and stress levels by at least 10%. This is a sizeable difference, and could contribute further to the betterment of mankind. We also asked about the typical motorists time spent parking before and after SparkPark. This data is summarized below:
We also asked participants to rate their own perceived technical ability with mobile applications from 1 to 10 as well as the usability of SparkPark. The best fit line approximation of this data can be seen below:

![SparkPark Usability vs User Technical Ability Graph]

---

**Conclusions and Call to Action**

The time and stress associated with finding good parking is wasteful. You owe it to yourself and those around you to take advantage of SparkPark and its benefits. More motorists using SparkPark will lead to an overall efficiency boost in the transportation infrastructure of our country, as less time will be wasted and parking spaces will be more efficiently used.

---

**About the Company**

The Sparkpark company was started by Brian Aarhus, Noah Betzen, and Ben Walker. What started as a simple project for a cyberethics class ended as one of the hottest transportation utility applications on the market. The creators of SparkPark are all
university students with their own vehicles. They understand the plight of so many motorists in America today, and they decided to create SparkPark because they realized the need for such an application. With a simple implementation and a wide reaching userbase, the future of Sparkpark is guaranteed to transcend time itself.

**System Overview Diagram**

Pictured above is the system overview diagram of SparkPark, which details the features and use of the application.