

# ARIEL SHKEDI

## Expert Software Engineer

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### HIGHLIGHTS

- Full Stack web developer, from setting up and securing a Linux webserver, to database design and optimization, to backend coding, to frontend design and display.
- 20 years experience in Web Technology and Software Development.
- Expert database designer and SQL query writer; fluent in all aspects of database development, including design, normalization, and optimization.
- Expert programmer for developing web applications, including HTML, CSS, Javascript, and jQuery.
- Experienced in Internet security and dedicated to writing thoroughly tested, secure, efficient and bug-free code.
- Quick to learn new systems, applications and languages.
- Excellent written communication skills.
- Works well with designers, and is expert at using CSS to create websites that match their vision.
- Attentive to customer requests and requirements, endeavors to fully understand their business needs when creating a new website.

### SKILLS AND EXPERIENCE

**Languages:** PHP, HTML, SQL, C, JavaScript, CSS, Shell Scripting, C++, Python, ASP, Perl, Java

**Other Languages:** DHTML, Visual Basic, LiveWire, Cold Fusion, Crystal Reports, Pascal, Basic, 6502 Assembly & Machine Language

**Databases:** MySQL, PostgreSQL, Oracle, Sybase SQL, Microsoft SQL, Microsoft Access

### CLIENTS, ASSIGNMENTS, AND ACCOMPLISHMENTS

**4D Pharmacy** (now part of **Magellan Health**), Troy, MI (Telecommute) (May 2009 - Present)

- Developed a diverse set of websites including: A document management system to manage medication requests; a site to let members search for a Pharmacy; and a secure private file sharing site.
- Designed a website using PHP to implement a document management system to manage requests for medication requiring prior authorization before dispensing. The system uses a

MySQL database to create timestamped and prioritized queues of requests for each department that works on the requests. The website displays a customized web page for each stage, where the requests can be processed and information added, and then forwarded to the next department. Each request has a complete history log of who viewed it or made a change, while recording exactly what was changed, for auditing and legal compliance purposes.

- Created a site for members to search for in-network pharmacies near them by geocoding all the pharmacies and using a distance search. Members can also search for pharmacies by name, and the system uses soundex encoding to find pharmacies even if they are misspelled.
- Made a secure, private, file sharing site using PHP. The site uses a secure token to validate the email address of users who can then share uploaded files via email with other people. The system requires the recipient to view the file within user controlled time limits to prevent leaks, and creates single-use file download links to prevent sharing access to files, or access via browser history. The user who shared the file can request notifications when the recipient verifies receipt of the share email, and when they actually download the file, and each action of the recipient is logged.

#### **Medtipster**, Troy, MI (Telecommute) (Jul 2007 - Present)

- Developed a website using PHP to allow people to search pharmacies in a geographical zone for the best price on generic medication, and for companies to provide insurance benefits to members based on discount pharmacies.
- Created a searchable database using NDDF data from [First DataBank](#) to create a drug database using MySQL with NCD, GCN, GSN and other names and identifiers to help users find generic versions of medication, or therapeutic alternatives with discounts.
- Imported the [NPI pharmacy list](#) and geocoded all the pharmacies to allow users to search pharmacies by distance.
- Wrote SQL queries to search and sort pharmacies, that have a discount on the selected drug, by geographical distance from the users home address, and cost, with millisecond response time.
- Created a member importer to import employee eligibility records and perform record updates while matching duplicated employees even when some of the employee data has been modified, and detecting problems with records.

#### **One World Blue, Blupela**, Pittsburgh, PA (Partly Telecommute) (Mar 2013 - Oct 2015)

- Created a user-driven website using HTML, CSS, and Javascript augmented with jQuery to allow people to raise money for good causes, and to publicize stories about people they admire.
- Designed a backend in PHP for people to create accounts, login, create and edit causes and stories, and upload files.
- Developed a social network activity feed using carefully optimized SQL queries to retrieve data quickly, with low server overhead.
- Wrote a search tool using PHP and SQL to search causes and stories while dynamically caching frequently searched patterns based on server overhead.
- Used CSS to match the look and user interface provided by a designer.

#### **DayByDays**, Pittsburgh, PA (Telecommute) (Aug 2010 - May 2013)

- Developed a calendar sharing website, allowing people to upload events, photos, and share calendars. The events can repeat based on user provided patterns.
- Designed a website written in JavaScript augmented with jQuery, that dynamically creates the HTML to display. It uses AJAX requests with JSON replies to communicate with a PHP backend to retrieve structured data to format and display.
- Developed a PHP backend to store unlimited nested data associated with each event on the calendar, and then retrieve the data belonging to the user, plus data that has been shared by other users.
- Designed a database to store repeating calendrical events, and wrote highly optimized SQL queries to quickly and efficiently search a database for repeating events that occur within the specified date range.

**Color My Mind**, a consulting company in Pittsburgh, PA (Telecommute) (Aug 2010 - May 2013)

- Created custom WordPress plugins and modules in PHP for customer websites.
- Wrote CSS rules to make the websites and user interface match specifications provided by a designer.

**Chayolei Tzivos Hashem**, Montreal, QC and Brooklyn, NY (Telecommute) (May 2007 - Aug 2010)

- Designed an incentive reward system for children, by using PHP to generate a website that dynamically creates personalized pages for each child.
- Developed a system to allow schools to use the website to enter activities for the children, with full flexibility to vary the activities by grade and skill level of the child.
- Created a system for the children to login by scanning a barcode, enter daily accomplishments with a checklist, and scan the barcode on reward cards given by teachers to claim the reward.
- Created a parallel website for parents to login and monitor their childrens' activities.

**MapleTime Systems**, Chicago, IL (Telecommute) (May 2006 - Aug 2009)

- Worked on a full featured contact and donation management system for non-profits written in PHP that could keep track of members, donors, donations, prospects, events, reservations, pledges, etc.
- Optimized existing slow SQL Queries to the MySQL database, and designed new tables for newly created features and modules.
- Designed HTML interfaces to perform various management operations on donors, donations, and other stored data, etc. Including searching, sorting, updating, adding, and linking related donors, assigning seats for dinner events, etc.
- Worked with customers of the system to develop new features and modules.
- Performed code cleanup to make the project easier for multiple developers to work on concurrently, and to make sure all generated HTML validated properly.

**Tristate Camera**, Brooklyn, NY (Telecommute) (May 2006 - Apr 2007)

- Improved the backend for a shopping website written in PHP, cleaned up and secured code, added backup procedures and source control to process.

- Wrote tools in PHP with a web interface for administrators to do things such as monitor performance of products, add accessories and related products to each item, better tools for adding descriptions and features to each product.
- Wrote export tools using Shell Scripting plus PHP to automatically send product feeds to shopping site aggregators, and import tools to add new products from vendors.
- Maintained and optimized Oracle database to improve website performance, setup backups and replication.

**Clickosher**, New York, NY (Telecommute) (Jan 2006 - March 2006)

- Designed new shopping cart system, and created a better back end order processing routine, using ASP.
- Redesigned look of site, using CSS.

**Park Medical Centers**, Detroit, MI (Telecommute) (Sep 2004 - Jan 2005)

- Developed an efficient workflow for processing medical patients and entering them into the computer system.
- Redesigned part of their existing website to better match how patient records were managed in the offices. This eliminated dual record keeping, and improved efficiency and accuracy.
- Instituted new backup procedures to ensure the the safety of patient data, and developed a verification system to allow quick synchronization of the database records with paper records in case of a computer failure.
- Developed a variety of new features for the client's online patient management system using Cold Fusion on a MySQL database.

**Burton Signs**, Pittsburgh, PA (May 2003 - July 2004)

- Created a web user interface using Perl to edit a MySQL database. This interface enabled the client to manage the products sold on their online ordering site.
- Performed ongoing maintenance, and developed new features for the site as needed by the client.

**Crown Antiques**, Pittsburgh, PA (Apr 2003 - Present)

- Repaired and improved a complex Perl web application to auction items on eBay. The application stored the items in a MySQL database, automatically posted the items, tracked their auction status, and performed end of auction actions.
- Created a tool using Microsoft Access to import and export the auctions between the eBay auction management tool and the Crown Antiques database.

**Medical Digital Photography**, Brookline, MA (Jun 2002 - Nov 2002)

- Wrote a program in Visual Basic to extract selected frames from an AVI video and store them as bitmaps.

- Designed a Visual Basic Form for video playback and extraction. It allowed the user to select specific frames to extract while playing the video at normal speed, in reverse, or by single stepping.
- Wrote a re-entrant Form in Visual Basic to allow the user to create as many video playback windows as desired, and to use them all simultaneously.
- Designed the Form's programmer interface to be very easy to use. The Form automatically managed it's own resources to enable the programmer to use the Form without needing to understand it.

**Pinnacle Systems** (Formerly Avid Sports), Lowell, MA (July 2001 - Oct 2001)

- Took over and completed development of a Cold Fusion application for professional sport scouts, called Scorpion, to store complete player profiles and historical data in Microsoft Access and SQL Server.
- Wrote an interface to allow scouts to perform complex searches on players and generate reports.
- Designed an interface in ASP for the Cold Fusion application to generate reports over the web using Crystal Reports ASP Server. The interface allowed scouts (by using the Cold Fusion application) to specify desired information and build the report on the fly.
- Used Crystal Reports to design a complex, on the fly, report that displayed a potential field layout of offensive and defensive players based on the data entered by the scouts,
- Used Crystal Reports to design a complex, on the fly, report that displayed complete charts of players categorized by playing style, team defense, and other parameters.

**Event Zero** (Formerly Inscribe Technologies), a consulting company in Arlington, MA (August 1999 - December 2000)

Worked on projects for the following company clients:

- Sandy Bay Networks: Designed and implemented a database migration from MySQL to Oracle. Redesigned tables and optimized queries to reduce page generation time from minutes to seconds, and migrated all old data.
- DebtX: Designed and programmed the DHTML for the site. Wrote the navigation bar and most of the active code throughout the site. Wrote browser adaptive code that works on Netscape 4, MS IE 4+, and on Mozilla (Netscape 6+).
- Myteam & Little League Baseball: Designed a new Oracle database for Little League Baseball to store data sent from the MyTeam database. Wrote PL/SQL and Unix Shell code that synchronizes the Little-League-Baseball database with the MyTeam database. Wrote BroadVision JavaScript code to allow users to upload, categorize, and view photos on the MyTeam web site.
- MyHelpDesk: Designed and implemented MS SQL database tables and associated ASP web code to log users and calculate statistics. Used Crystal Reports to create reports to view the data.

**First Call Corp. (Thomson Financial Services)**, Boston, MA (September 1998 - March 1999)

- Developed a secure full-featured user authentication system, using Cold Fusion, to allow

varying levels of user access to an application for monitoring a Sybase database of financial documents. The application included features for allowing administrators to easily manage large numbers of users.

- Created a user interface for a collection of Cold Fusion scripts, by developing an easy to customize, collapsible, multi-level menu system.
- Developed an alert system to monitor the status of databases and applications, including a Cold Fusion interface to select the users to receive pager and email alerts.
- Rewrote Unix Perl scripts as Cold Fusion pages with easy to understand interfaces.

**Eprise Corp.** (Formerly Novalink USA), Westborough, MA (April 1996 - July 1997)

- Developed Web based applications written in Cold Fusion, LiveWire, and Visual Basic for Internet and Intranet customers.
- Designed a novel high security method for user authentication and access control on Cold Fusion and LiveWire web pages.
- Created high security web pages that interface with Oracle, Microsoft SQL, Microsoft Access, and Sybase databases.
- Developed a full featured web-based message board in both Cold Fusion and LiveWire, using Access and Oracle databases, to allow users to post, reply and search messages and to administer different levels of access to the message board.
- Wrote a CGI in Visual Basic which uses OLE to allow users to access and modify a remote Microsoft Excel spreadsheet through a web server.

## **EDUCATION**

**Worcester Polytechnic Institute (WPI)**, Worcester, MA (1995)

- Major: Computer Science.
- GPA 4.0/4.0 in Computer Science.

## **Social Networks and professional forums**

(Links available upon request.)

- Top #100 user on Hacker News
- Top 2% user on StackOverflow
- Contributor to Open Source projects on GitHub
- Was an early contributor to PHP development.
- Independently discovered the security problems of SQL Injections in 1997 while working at Novalink (but was not permitted to go public), and secured all software written there against it.