





Develop the social and cultural capital of individuals, primarily serving those from immigrant families, to become leaders in the workforce.





- 2 SaaS for Nonprofits
 Journey to SaaS world
- Performance bottlenecks
 What went wrong? How did we identify issues?
- SPEEEEEEEEED!

 How did we iterate our performance improvements
- Keeping this up in the future
 Monitoring, Training, Volunteering, Champion





HI! It's nice to be here and meet you all!



Akshay Nair Software Engineer

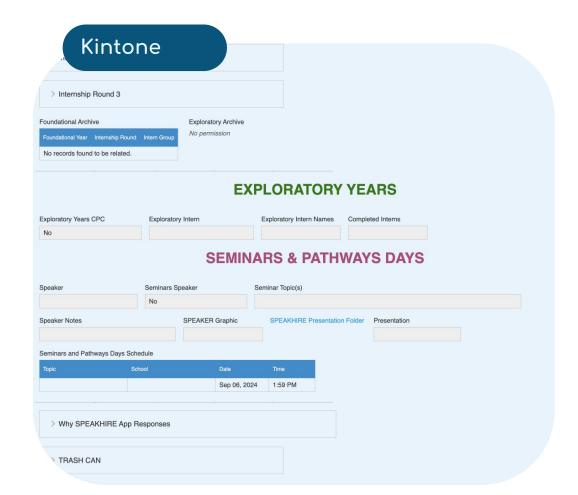


Our Journey How we build our platform



SaaS For Nonprofits

- Legacy Technology (Smorgasboard of Apps)
 - Public:
 - Squarespace
 - Typeform
 - Google forms
 - o Internal:
 - Kintone
 - Google suite for all internal tasks
 - Zapier automations
 - Low potential for scale
 - Manual
 - Repetitive and Error prone
 - Slowwwwww

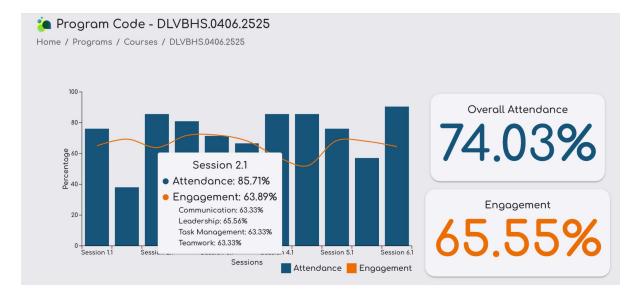




SaaS For Nonprofits

- New Technology (Single solution application)
 - Bespoke SaaS solutions
 - General access platform
 - Involved all parties from get go
 - Collaborative
 - Automation of processes
 - Matching process
 - Reporting and Management
 - High potential for scale
 - If done well, we only need training staff
 - Ability to move outside of the NYC area
 - SPEEEEEED!!

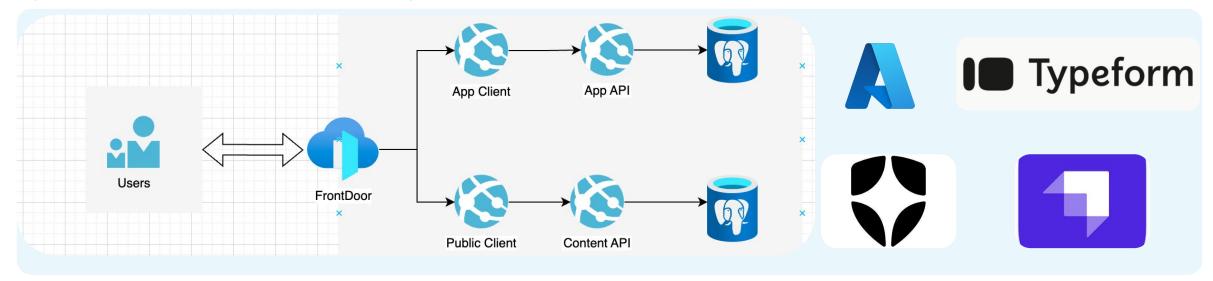






The objective is to empower users but retain maximum control

- Keeping it simple with an N-tiered architecture, leveraging JS across the whole stack
- Preference for platform solutions, instead of fully self managed infrastructure
- Combine that with self hosting solutions





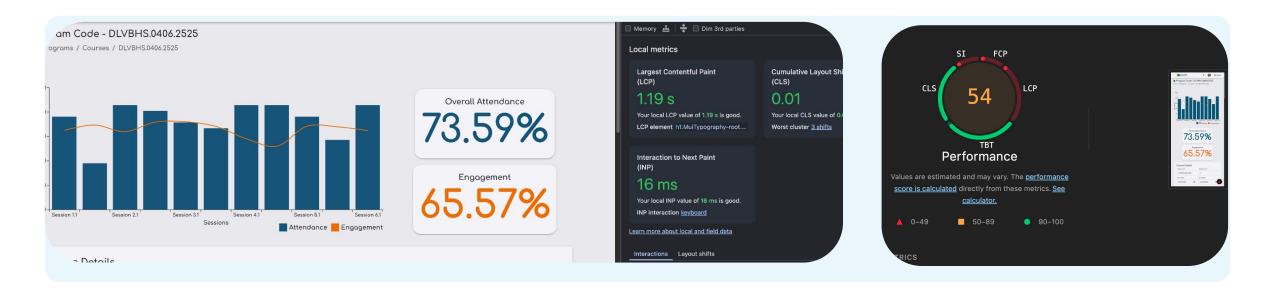
2 Years in...

What went wrong?



State of affairs at this stage

- Pages were slow to load, builds were super heavy
- Frequent page crashes. Usability issues when students would attempt to login to the platform
- Data loss, server crashes, infinite loops, incomplete features causing more failures
- and the list goes on...





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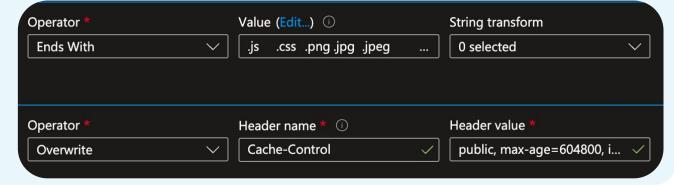
How did we fix things? What are we learning?



Fonts, Assets

- We started by self-hosting our fonts instead of using a CDN
- We had originally cached the fonts via an NGINX server, but pivoted to Azure front door CDN after we received a grant from Azure

```
afont-face {
  font-family: 'Comfortaa';
  font-style: normal;
  font-display: swap;
  font-weight: 600;
  src: local('Comfortaa'), local('Comfortaa-Regular'), url(${Comfortaa}
  unicodeRange: U+0000-00FF, U+0131, U+0152-0153, U+02BB-02BC, U+0
```







Compression

```
# --- GZIP COMPRESSION ---
gzip on;
gzip_disable "msie6";
gzip_vary on;
gzip_proxied any;
gzip_comp_level 6;
gzip_buffers 16 8k;
gzip_http_version 1.1;
gzip_min_length 256;
gzip_types
  application/javascript
  application/json
  application/vnd.ms-fontobjec
  application/x-font-ttf
  application/xml
  font/opentype
  image/svg+xml
  image/x-icon
  text/css
  text/plain
  text/xml
  text/javascript;
```

We tested out working with NGINX servers to help us with costs instead of a CDN

Our users are still mostly based out of NYC area

```
# --- SECURITY HEADERS ---
add header
X-Content-Type-Options "nosnif
add header
X-Frame-Options "DENY" always;
add header
X-XSS-Protection "1; mode=bloc
add header
Referrer-Policy "no-referrer"
add_header
Permissions-Policy "camera=()
add header
Strict-Transport-Security "max
add header
Content-Security-Policy "
     default-src 'self';
     script-src 'self' 'unsafe
     style-src 'self' 'unsafe-
     img-src 'self' data: blob
     font-src 'self' https:;
     connect-src 'self' https:
   " always;
```

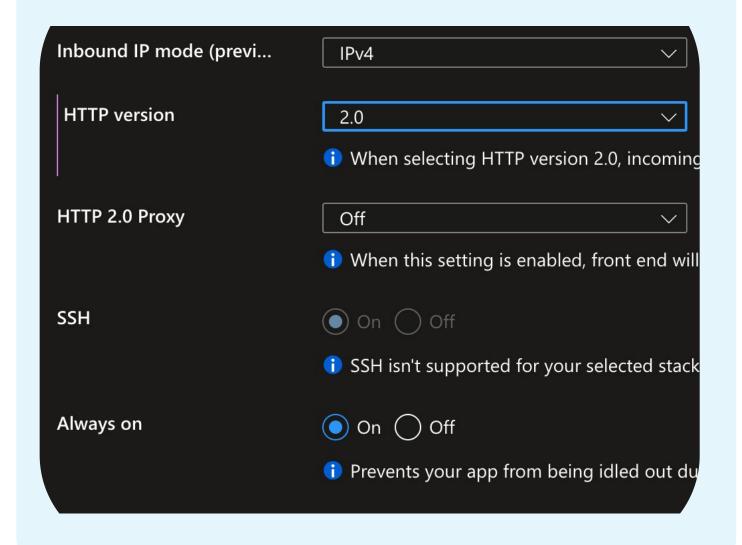
We still use NGINX for security headers, rate limiting, and other security concerns.

This is in conjunction with Azure WAF protection



More interesting win

HTTP/2 - Flipped a switch





Yellow lights for devs

Linter rules

While there is ongoing work to refactor older code, we added in rules for new devs to not use them.

Especially important since the team is mostly composed of contractors and interns

```
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'no-restricted-imports':[
    'warn',
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               group: ['@mui/icons-material/*'],
               message: '▼ Import only the icons you use. Avoid wildcard or full-package imports.',
               group: ['@components/pure-form/*'],
               message:
                   '🛕 Avoid using imports from @components/pure-form/. Use similarly named module at @
               group: ['@constants/yup-schemas'],
                   '🛕 Avoid using imports from this file. Use similarly named module at @constants/pur
              group: ['@dashboard/program-invites'],
              message: 'A Deprecated file',
```



Ongoing efforts

- Ensuring images have a fixed height and width to prevent layout shifts
- Adding in Suspense in appropriate places
- Optimizing RTK queries to correctly cache API responses
- Adding in form control, and error handling
- Removed components which didn't have an active use in production
- Modified pages for re-use

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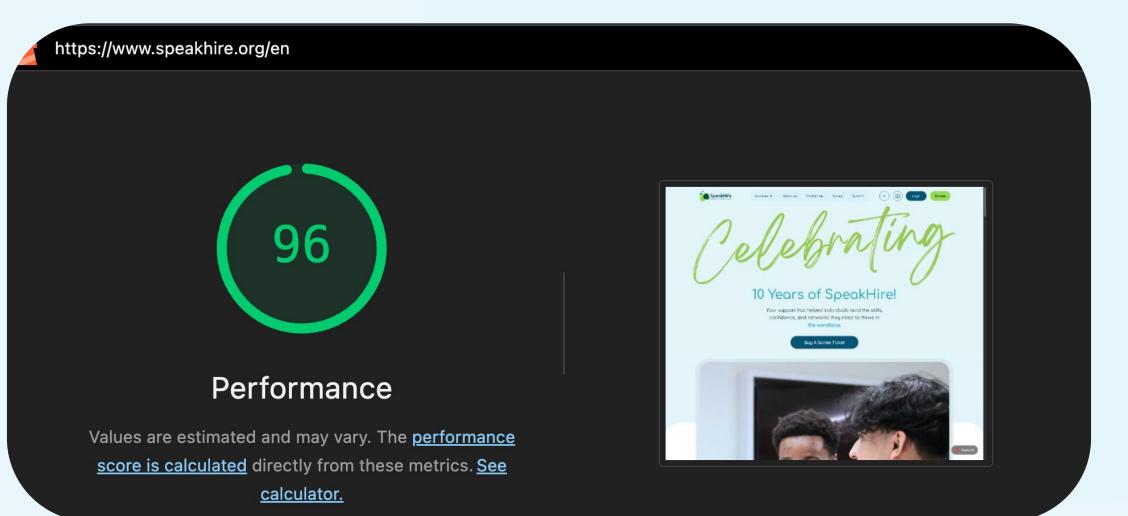


Our Future

How we applied those learnings



Our Public Website - Old Wins, New Challenges







10th Year Celebration on the 26th June, 2025

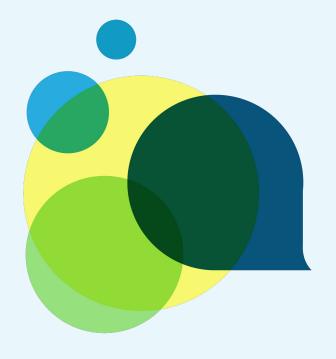


Tickets



Soiree page





Q & A

Thank you!

