

PROJECT: AMAZON AWS EC2 INSTANCE WEBSITE HOSTING



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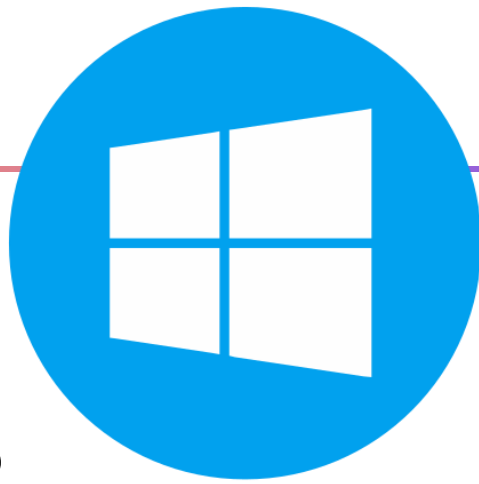
What I learned

Goal

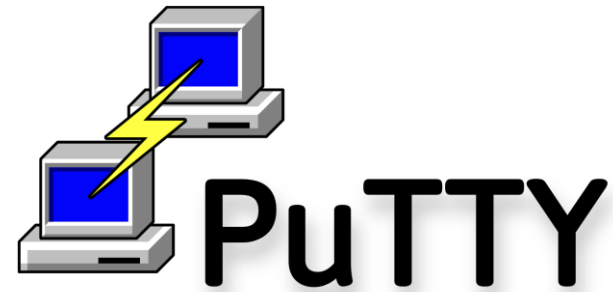
- Explore different cloud vendors.
- Set up a cloud server.
- Host a simple website.
- Gain experience and understanding of cloud computing.



Tools



- Amazon Web Services (AWS EC2)
- Amazon Linux 2023
- PuTTYGEN (key generator)
- PuTTY (SSH connection)
- SCP (Secure Copy for file transfer)
- VSC (HTML + CSS)
- Windows OS



**MICROSOFT AZURE,
GCP**

**AKA GOOGLE CLOUD PLATFORM
OR**

AWS

AKA AMAZON WEB SERVICES

?

OPTIONS



Microsoft Azure
1 month trial 200 credits



GCP
3 month trial 300 credits



Amazon AWS
12 month free tier



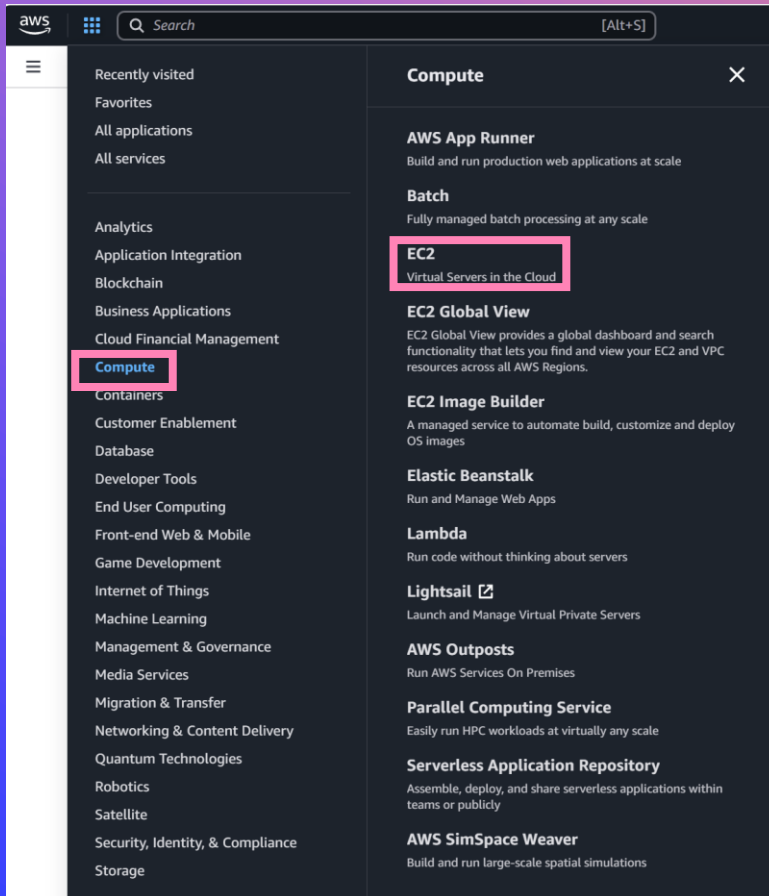
SIGNING UP & SETTING UP



- I signed in and created an AWS account.
- I browsed documentaries, demos and tutorials and watched several Youtube videos!

NOW LET'S
CREATE AN EC2
INSTANCE!

Select Console ->
Compute -> EC2



There are no instances running,
so let's create and launch one

Resources

You are using the following Amazon EC2 resources in the Europe (Stockholm) Region:

Instances (running)	0	Auto Scaling Groups	0
Elastic IPs	0	Instances	0
Placement groups	0	Security groups	1

Launch instance

To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

[Launch instance](#) [Migrate a server](#)

Note: Your instances will launch in the Europe (Stockholm) Region

First I named my server

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name

MyTestServer

[Add additional tags](#)

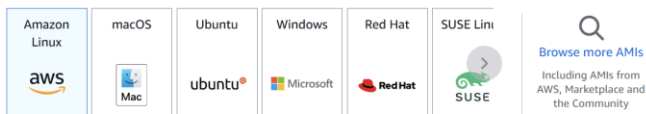
Then chose desired operating system. I chose Amazon Linux, since it is free tier eligible

▼ Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Q Search our full catalog including 1000s of application and OS images

Quick Start



Amazon Machine Image (AMI)

Amazon Linux 2023 AMI
ami-0274f4b62b6ae3bd5 (64-bit (x86), uefi-preferred) / ami-0b61b23eef039431a (64-bit (Arm), uefi)
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Amazon Linux 2023 is a modern, general purpose Linux-based OS that comes with 5 years of long term support. It is optimized for AWS and designed to provide a secure, stable and high-performance execution environment to develop and run your cloud applications.

Amazon Linux 2023 AMI 2023.7.20250331.0 x86_64 HVM kernel-6.1

Architecture	Boot mode	AMI ID	Publish Date	Username
64-bit...	uefi-preferred	ami-0274f4b62b6ae3bd5	2025-03-29	ec2-user

Verified provider

As an instance type I went with free tier eligible t3.micro

Get advice on instance type selection...

t3.nano
Family: t3 2 vCPU 0.5 GiB Memory Current generation: true
On-Demand Ubuntu Pro base pricing: 0.0089 USD per Hour
On-Demand Windows base pricing: 0.01 USD per Hour
On-Demand SUSE base pricing: 0.0054 USD per Hour
On-Demand Linux base pricing: 0.0054 USD per Hour

t3.micro Free tier eligible
Family: t3 2 vCPU 1 GiB Memory Current generation: true
On-Demand Ubuntu Pro base pricing: 0.0143 USD per Hour
On-Demand RHEL base pricing: 0.0396 USD per Hour
On-Demand SUSE base pricing: 0.0108 USD per Hour
On-Demand Linux base pricing: 0.0108 USD per Hour
On-Demand Windows base pricing: 0.02 USD per Hour

t3.small
Family: t3 2 vCPU 2 GiB Memory Current generation: true
On-Demand Ubuntu Pro base pricing: 0.0251 USD per Hour
On-Demand SUSE base pricing: 0.0526 USD per Hour
On-Demand Linux base pricing: 0.0216 USD per Hour
On-Demand RHEL base pricing: 0.0504 USD per Hour
On-Demand Windows base pricing: 0.04 USD per Hour

t3.medium
Family: t3 2 vCPU 4 GiB Memory Current generation: true
On-Demand RHEL base pricing: 0.072 USD per Hour
On-Demand Linux base pricing: 0.0432 USD per Hour
On-Demand Ubuntu Pro base pricing: 0.0467 USD per Hour
On-Demand Windows base pricing: 0.0616 USD per Hour
On-Demand SUSE base pricing: 0.0995 USD per Hour

t3.large
Family: t3 2 vCPU 8 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0864 USD per Hour
On-Demand RHEL base pricing: 0.1152 USD per Hour
On-Demand Ubuntu Pro base pricing: 0.0899 USD per Hour
On-Demand Windows base pricing: 0.114 USD per Hour
On-Demand SUSE base pricing: 0.1427 USD per Hour

t3.micro Free tier eligible
Family: t3 2 vCPU 1 GiB Memory Current generation: true
On-Demand Ubuntu Pro base pricing: 0.0143 USD per Hour
On-Demand RHEL base pricing: 0.0396 USD per Hour
On-Demand SUSE base pricing: 0.0108 USD per Hour
On-Demand Linux base pricing: 0.0108 USD per Hour
On-Demand Windows base pricing: 0.02 USD per Hour

Additional costs apply for AMIs with pre-installed software

Now I needed to create key pair for login

▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

Select ▼



[Create new key pair](#)

Create key pair



Key pair name

Key pairs allow you to connect to your instance securely.

Enter key pair name

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type



RSA

RSA encrypted private and public key pair



ED25519

ED25519 encrypted private and public key pair

Private key file format



.pem

For use with OpenSSH



.ppk

For use with PuTTY



When prompted, store the private key in a secure and accessible location on your computer. **You will need it later to connect to your instance.** [Learn more](#)

[Cancel](#)

[Create key pair](#)

Since I'm using Windows, I chose .ppk format to use with PuTTY

Let's define security rules

The screenshot shows the 'Network settings' section of the AWS Management Console. It includes tabs for 'Network' and 'Subnet'. Under 'Network', there's a section for 'Auto-assign public IP' which is set to 'Enable'. Below that is the 'Firewall (security groups)' section. It has two radio buttons: 'Create security group' (selected) and 'Select existing security group'. A message states: 'We'll create a new security group called 'launch-wizard-1' with the following rules:'. There are three checkboxes: 'Allow SSH traffic from' (checked, source: 'Anywhere' / '0.0.0.0/0'), 'Allow HTTPS traffic from the internet' (unchecked), and 'Allow HTTP traffic from the internet' (checked). A yellow warning box at the bottom states: 'Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.'

▼ Network settings [Info](#) [Edit](#)

Network [Info](#)

vpc-01gk...

Subnet [Info](#)

No preference (Default subnet in any availability zone)

Auto-assign public IP [Info](#)

Enable

Additional charges apply when outside of free tier allowance

Firewall (security groups) [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☒ Create security group ☐ Select existing security group

We'll create a new security group called 'launch-wizard-1' with the following rules:

☒ Allow SSH traffic from
Helps you connect to your instance Anywhere
0.0.0.0/0

☐ Allow HTTPS traffic from the internet
To set up an endpoint, for example when creating a web server

☒ Allow HTTP traffic from the internet
To set up an endpoint, for example when creating a web server

⚠ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only. ✕

I wanted to host a website from this server, so I had to allow some HTTP traffic

Yes, some minor issues with safety here..!

▼ Summary

Number of instances

Info

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.7.2...[read more](#)

ami-0274f4b62b6ae3bd5

Virtual server type (instance type)

t3.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Free tier:

In your first year of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where t2.micro isn't available) when used with free tier AMIs, 750 hours per month of public IPv4 address usage, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel

Launch instance

Preview code

Ready to board and launch!

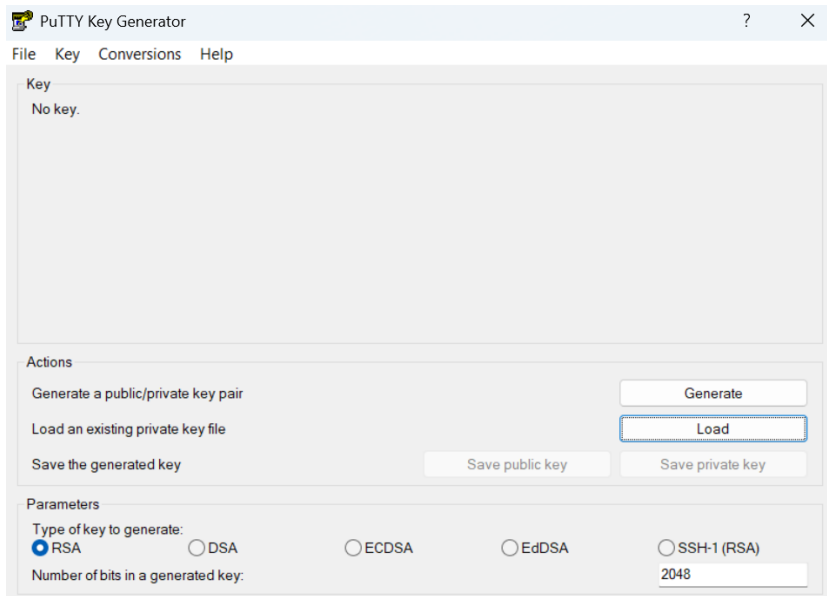
Success

Successfully initiated launch of instance (i-09f374bc9519e0a9b)

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check
<input type="checkbox"/>	MyTestServer	i-09f374bc9519e0a9b	Running	t3.micro	Initializing

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check
<input type="checkbox"/>	MyTestServer	i-09f374bc9519e0a9b	Running	t3.micro	3/3 checks passed

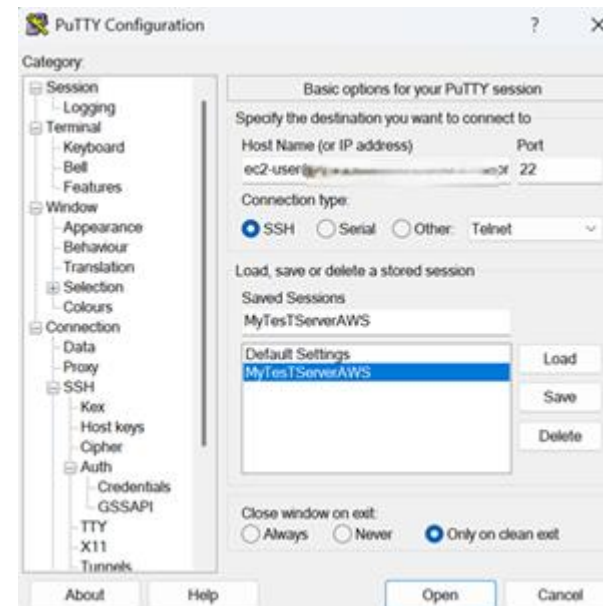
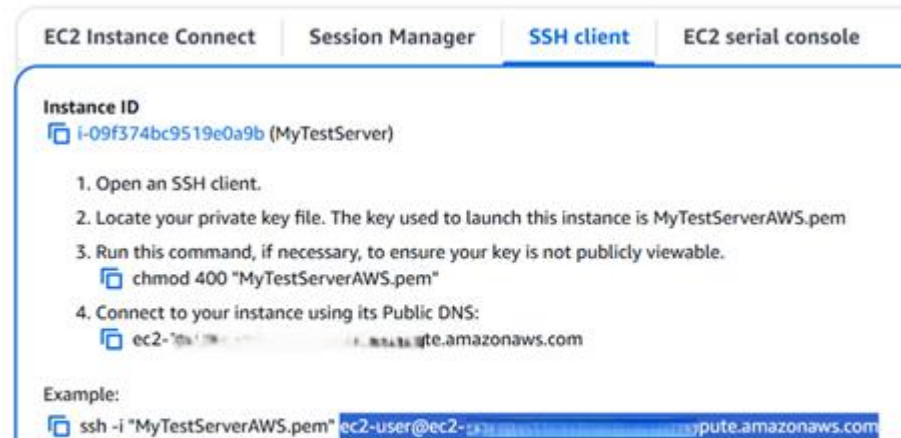
EC2 instance is ready to go, let's SSH our way in



I needed to create key with PuTTY Key Generator.
Checked RSA and clicked Load.
I chose .ppk file I created earlier.



Then I could leave PuTTYGen and go to PuTTY to SSH in the server. I got my host name from the EC2 instance.



Paste host name, add the key and save the session and click open...


```
[ec2-user@ip-172-31-33-105 ~]$ sudo su
[root@ip-172-31-33-105 ~]# yum update
Amazon Linux 2023 Kernel Livepatch repository          145 kB/s | 15 kB      00:00
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-33-105 ~]# yum update -y
Last metadata expiration check: 0:02:20 ago on Tue Apr 15 10:54:10 2025.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-33-105 ~]#
```

→ sudo su
→ yum update

```
Installed:
apr-1.7.5-1.amzn2023.0.4.x86_64
apr-util-1.6.3-1.amzn2023.0.1.x86_64
apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64
generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch
httpd-2.4.62-1.amzn2023.x86_64
httpd-core-2.4.62-1.amzn2023.x86_64
httpd-filesystem-2.4.62-1.amzn2023.noarch
httpd-tools-2.4.62-1.amzn2023.x86_64
libbrotli-1.0.9-4.amzn2023.0.2.x86_64
mailcap-2.1.49-3.amzn2023.0.3.noarch
mod_http2-2.0.27-1.amzn2023.0.3.x86_64
mod_lua-2.4.62-1.amzn2023.x86_64

Complete!
[root@ip-172-31-33-105 ~]#
```

→ yum install -y httpd

```
[root@ip-172-31-33-105 ~]# systemctl status httpd
httpd.service - The Apache HTTP Server
Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
Active: inactive (dead)
Docs: man:httpd.service(8)
[root@ip-172-31-33-105 ~]#
```

→ yum systemctl status httpd

Then I needed to copy the code for my websites to server's directory with WinSCP. There seemed to be a problem with permissions, so I needed to run a command to give the permission to change files. (This is not safe setting for real usage!)



Let's see if everyone's made it to the new home...

```
ec2-user@ip-172-31-1-101:~/html]$ ls
LICENSE.txt  css  img  js  mail
README.txt  freelancer-portfolio-template.jpg  index.html  lib  scss
ec2-user@ip-172-31-1-101:~/html$
```

All good! It is time to start the server!

→ `service httpd start`

```
ec2-user@ip-172-31-1-101:~/html]$ service httpd start
Redirecting to /bin/systemctl start httpd.service
Failed to start httpd.service: Access denied
See system logs and 'systemctl status httpd.service' for details.
```

Whoopsie, *someone* kicked the root user out, let's try again.

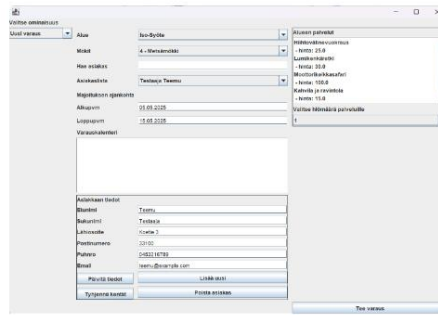
Main language used at UEF.

Completed a course in Information Management and SQL, focusing on relational databases, data modeling, and SQL queries.

Currently studying a web course on R.

PROJECTS

MY PORTFOLIO

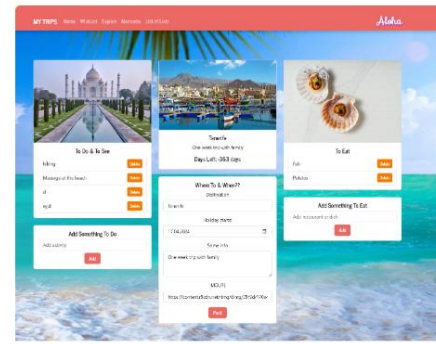


Cottage Rental Application

Java + MySQL



ArcadeGame on Android
Java + AndroidStudio



TravelPlanner
JavaScript + React + HTML



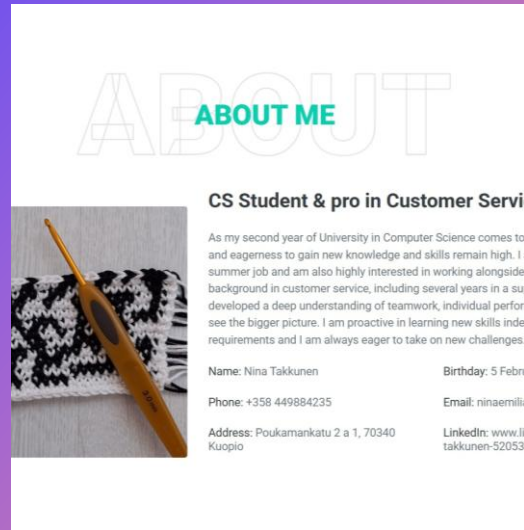
My project:
studying Linux basics



My project:
experimenting with Amazon AWS

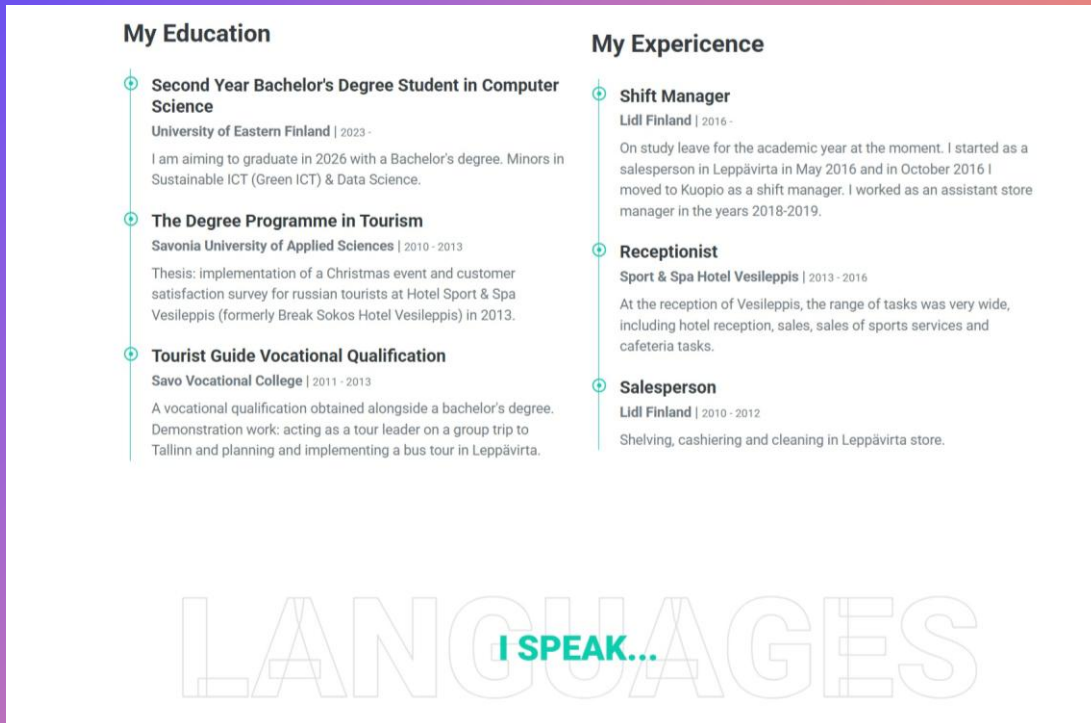
dress
| [open address](#) 

The website is
up and running!



What i learned?

- How to launch a cloud-based virtual server
- Basics of Linux management
- How to install and manage HTTP server
- How to deploy and serve static websites from EC2
- Troubleshooting, as in every project ever!
- There are still major safety issues to be solved



15.4.2025

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I HOPE YOU ENJOYED MY LITTLE EXPERIMENT!

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