



香港中文大學(深圳)

The Chinese University of Hong Kong, Shenzhen

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# 计算机专业的出路 & 实习经验分享

叶晓星, 2020 年 2 月



# TOC

Self Introduction

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Detailed Experience in Microsoft

What's To Do After Graduations?

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General Suggestions to CS Students



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# Self-introduction

Xiaoxing YE (叶晓星), Year-4 Undergraduate in School of Science and Engineering,  
CUHK-Shenzhen

Majored in Computer Science and Engineering. Member of Diligentia College

Microsoft Aspire of 2020 Batch





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# In-campus Experiences

Actively involved in university affairs.

- 01 | Founder of Computer @nd Comity (with Jinjin Gu)
- 02 | General-Secretary of Student Union
- 03 | Student Helper in CPRO, ITSO, & CPDO
- 04 | Founder of Sun Never Sets Studio
- 05 | Research Assistant of Dr. Chen Shanquan
- 06 | Student Ambassador
- 07 | Undergraduate Student Teaching Assistant





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# Intern Experiences

1

2018 Summer  
First Code Academy, Shenzhen & Shanghai  
Course Instructor in STEM  
\* Offered by CPDO Recommendation

2

2018.8 - 2019.1  
Microsoft STCA (Beijing)  
Software Engineer Intern  
\* Detailed Information Attached

3

2019.1 - 2019.4  
PricewaterhouseCoopers (PwC)  
Guangzhou Branch  
Cyber Security Team Intern  
\* Offered by PwC STEM Day

4

2019.6 - 2019.8  
Tencent, Shenzhen  
CSIG (Cloud and Smart Industries Group)  
Testing Developer  
\* Offered by Online Recruitment



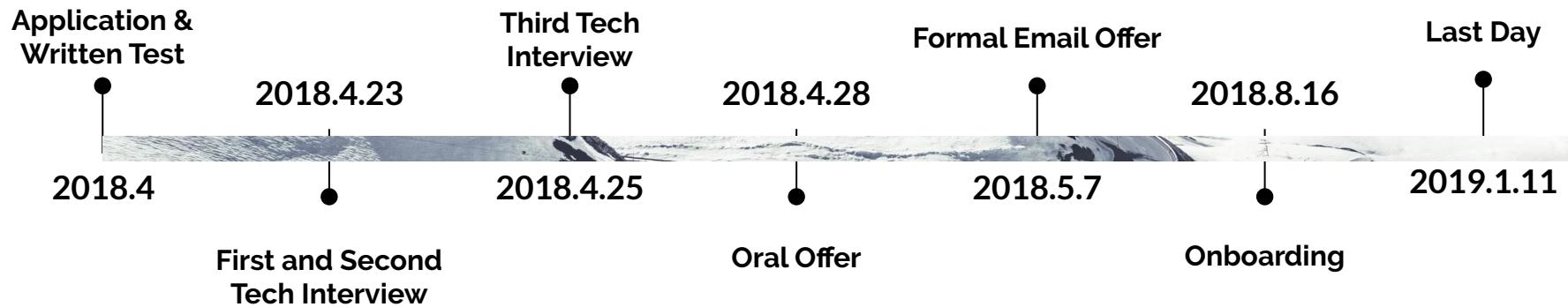
# 微软(亚洲)互联网工程院

## Microsoft STC Asia





# My Timeline





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# Intern at Microsoft

## 01 What I do?

In Microsoft, there is no difference between Frontend Developer and Backend Developer. All developers are equal.

SDET is cut, so everyone needs to take care.





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# Intern at Microsoft

## 02 What they offer?

1. Full trust.
2. Mentorship.
3. Adequate development resources.
4. Care from others.
5. Free drinks and fruits :)





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# What they offer?

## Free drinks





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# What they offer?

## Free drinks





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## What they offer?

Canteen  
(not free, allowance applied)





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What they offer?

Surprise on specific days





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# What they offer?

Development  
resources





## What they offer?

Air purifier across the buildings





# What To Do After Graduations?



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# Different Options

Seek for Employment

Continue on Master / Ph.D Studies

Entrepreneurship





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# Employment

- Companies in Foreign Countries
- China Branch of International Companies
- Domestic Companies
- State-owned Enterprise





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# Post-graduate Studies

- Master
  - In China
  - In Other Countries
- Ph.D





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# Compare Industry and Research

## Research

- Discover new knowledge
- State-of-art
- University (Or company like Google, Facebook, Sensetime)
- Less Money

## Industry

- Use known knowledge to create value
- Reality
- Company
- More Money



# How to Prepare for Employment?



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# How to Prepare for Employment?



0  
1

## Understand the Industry

You should get to know what kind of people the industry needs.

## Prepare the Knowledge

Learn the skills the position requires.



0  
2



0  
3

## Know the Schedule

Get to know what to do in different stages.



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## Understand the Industry

You should get to know what kind of people the industry needs.

How?

Use online resources.



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# Industry - Different Positions - Take Developer as Example

- Programming Languages
  - Frontend
  - Backend
  - iOS / Android
  - ...
- Project Experiences
  - Self-motivated
  - Internships
  - Course Project



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# Prepare the Knowledge

1. Study the courses offered by University - Slides by Prof. Huang Rui



# CSE Knowledge Areas

- AL - Algorithms and Complexity
- AR - Architecture and Organization
- CN - Computational Science
- DS - Discrete Structures
- GV - Graphics and Visualization
- HCI - Human-Computer Interaction
- IAS - Information Assurance and Security
- IM - Information Management
- IS - Intelligent Systems
- NC - Networking and Communications

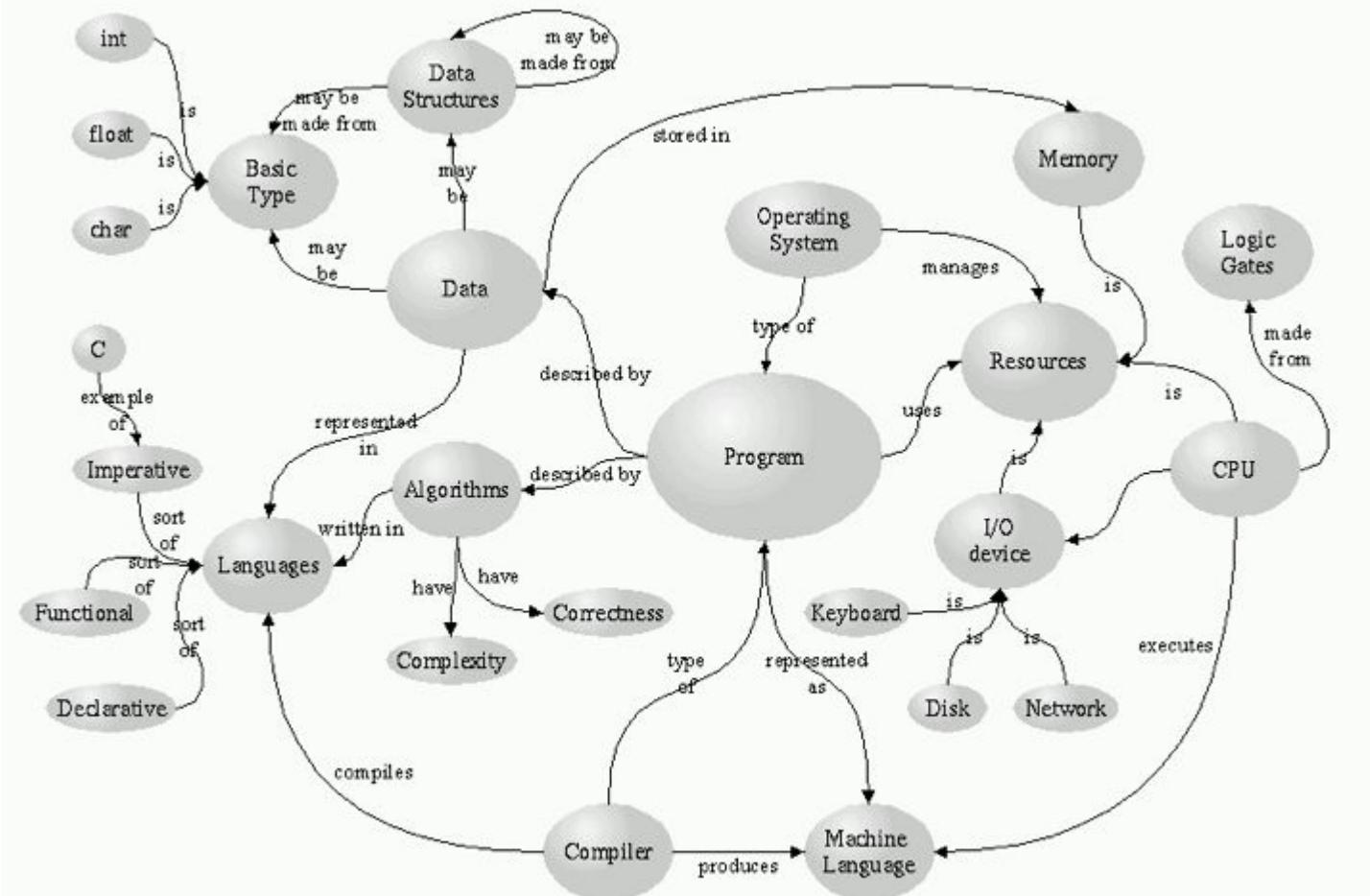
Ref:

*Computer Science Curricula 2013*

*Curriculum Guidelines for Undergraduate Degree Programs in Computer Science*

Association for Computing Machinery (ACM) & IEEE Computer Society

- OS - Operating Systems
- PBD - Platform-based Development
- PD - Parallel and Distributed Computing
- PL - Programming Languages
- SDF - Software Development Fundamentals
- SE - Software Engineering
- SF - Systems Fundamentals
- SP - Social Issues and Professional Practice





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# Typical Course Placement

- Introduction to Computing
- Programming Methodology
- Programming Abstractions
- Programming Paradigms
- Data Structures
- Algorithms
- Programming Languages
- Compilers
- Software Engineering
- Parallel Computing,  
Distributed Computing, and  
Cloud Computing
- Mobile Computing, Web  
Computing, etc.



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# Prepare the Knowledge

1. Study the courses offered by University
2. Learn more beyond the classes



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# Emerging New Technologies

There are lots of new technologies applied in industries and even researches.

- React, Vue, Webpack, ... - Frontend Techniques
- HTTP/2, QUIC, WebSocket, ... Web Techniques
- Golang, Rust, ... New Programming Languages



# Prepare the Knowledge

1. Study the courses offered by University
2. Learn more beyond the classes
3. Learn to be human



## Know the Schedule

Year 1 & 2:

Know what you are going to learn

Actively participate in different events

Get to know your elder fellows



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## Know the Schedule

Year 3:

Participate in researches or internships

Learn more professional techniques



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## Know the Schedule

Year 4:

Apply for employment / post-graduate institutes.



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## Know the Schedule - Employment

June - Nov: Autumn Campus Recruitments - for upcoming graduates

Nov - Dec: Winter Intern Recruitments

Feb - May: Spring Campus Recruitments - mainly to fulfill different needs



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## Know the Schedule - Employment

Autumn Campus Recruitment (Tencent as example):

1. Applications before mid-Sep - Ask for referral!
2. Written Test during mid-August and late-Sep
3. Interview during late-Sep and Oct
4. \* Early batch before mid-Sep



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## How to Know the Start of Recruitments?

1. Read EVERY EMAIL from Career Planning and Development Office (职业规划与发展处)
2. Follow WeChat Public Accounts of companies.
3. Look at forums or blogs.



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# Write Your Resume

Highlight your self.

Tell HRs and interviewers what's your strength.

Never cheat.



# Sample of Resume

That's mine :) May not be good enough.

## 教育经历

香港中文大学 (深圳)

学士 - 计算机科学与技术

- 2018 - 2019 学年: Gap Year
- 主修课程: C++ 编程、Python 编程、离散数学、数据结构与算法、数据库设计
- CUHKSQLib 共同作者。这是一个针对学术用途的轻量级 C++ 库
- 曾于 2017 年 6 月前往香港中文大学修读暑期课程

中国深圳

2015 年 9 月 - 至今

## 个人能力

编程 Python, C/C++, MySQL, Flask, HTML 5, JavaScript

操作系统 Linux, Windows

语言 中文 (普通话及粤语)、英文

## 经历

腾讯

深圳

2019 年 6 月 - 2019 年 8 月

专项测试开发

- 在 CSIG (云与智慧产业事业群) 质量部负责专项测试开发，主要工作内容为开发业务 CI 框架、数据平台

微软

北京

软件开发实习生

2018 年 8 月 - 2019 年 1 月

- 在 Office Experience Organization 中担任软件开发实习生，负责 PowerPoint Online 的维护
- 工作内容：引入 WebSocket、对 Service Worker 进行调研

香港中文大学 (深圳)

中国深圳

2017 年 11 月 - 2018 年 5 月

研究助理

- 研究方向：区块链在学术会议文章审核中的应用

Conferency, Inc.

中国深圳

2016 年 6 月 - 2017 年 9 月

程序员

- 我作为远程开发实习生，负责项目前端、后端的开发。项目主要使用 Python、Flask 及 MySQL。

• 在项目过程中，我负责后端系统的测试及系统优化，重点放在数据库调优上。同时我开发了用户会话过期机制，并提升了前端用户体验。

深圳大数据研究院

中国深圳

2017 年 5 月 - 2017 年 9 月

项目负责人及后端开发者

- 我负责研究院关于学生成绩的展示平台开发。该平台是面向大学管理层，以展示学生日常学习生活及学业成绩的关系。

• 我作为项目负责人，协调项目开发进度及兼任项目后端开发者。项目后端使用 Python、Flask、Redis 及 MySQL 开发。

香港中文大学 (深圳)

中国深圳

2016 年 12 月 - 2017 年 5 月

本科生教学助理

- 我担任计算机实验课的本科生教学助理，与其他 7 位同学一起负责课程资料的准备、日常课程的授课及解答学生疑问。

## 课余项目

香港中文大学 (深圳) 微信校园卡及微信小程序项目

中国深圳

2017 年 6 月 - 至今

后端开发者

- 项目自 9 月正式运行至今，已有数千名学生使用小程序。我负责项目后台程序开发及维护。

• 项目被腾讯评为微信校园卡“数字化明星”项目。



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# Prepare for Written Test & Interview

1. Practice more and more and more ....
  - a. Leetcode <https://leetcode-cn.com/>
  - b. Nowcoder (牛客) <https://www.nowcoder.com/>
  - c. 1point3acres <https://www.1point3acres.com/bbs/>
2. Know what kind of questions will be asked in interviews (面经)
3. Carefully listen to the requirements of questions. For example...



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## Sample Question

You are given a list of  $n$  integers, ranging  $[0, n-1]$ . Only two of them are the same. Please design an algorithm to find it out.

Can you figure out some different algorithms and their complexity, under different circumstances?



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## Hints for Interviews

What interviewers want are colleagues that make them feel comfortable if working together.

Respect your interviewers, and discuss with them.

Know what you are applying for.



# Interest lights the future.



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## Some General Suggestions

- 如果是计算机专业的学生，或者对计算机专业有强烈兴趣，那么首先应该重视的是计算机科学概论，先从一个宏观的角度去了解这个学科和学科里面各个细分领域。
- 找一两个水平接近的搭档一起学，一起讨论，一起找项目做，这样进步要快。
- 要有“溯源”的思想。溯源就是追踪到根源。
- Prepare for Failure



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# Advertisement

If you are interested in Microsoft China Summer Interns, contact me with  
you bi-lingual (Chinese & English) resume :)



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# Contact Me

You can reach me online or offline.

- 01** | Email: [ye@xiaoxing.us](mailto:ye@xiaoxing.us)
- 02** | LinkedIn: <https://www.linkedin.com/in/yexiaoxing/>
- 03** | Offline chatting:  
By appointment. I am often in CIDE.





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# Contributions

Thanks for Shunan Jiang, Prof. Rui Huang, Prof. Junhua Zhao, Zamir Sun (Fedora Project) (Under Licence: CC-BY-NC), Jactry Zeng, and Qian Hong for providing their insights, contents, and suggestions.



# Thank you.

