An Entrepreneur’s Journey:
It all began with a CS/Engineering Degree

Smita Bakshi
President, co-founder zyBooks
PhD in Computer Science

Assistant Professor, ECE
The zyBooks Story
Reducing STEM Attrition

“... performing poorly in STEM classes relative to non-STEM classes were associated with an increased probability of switching majors for STEM entrants ...”

STEM Attrition: College Students’ Paths Into and Out of STEM Fields, Statistical Analysis Report, November 2013, National Center for Education Statistics, U.S. Department of Education
zyBooks for Computer Science / Engineering

Animations & simulations
Interactive tools, Coding windows
Learning questions with feedback
Auto-graded labs

Examples:
- Data Structures Essentials
- Programming in Java
- Computer Organization and Design (5e) - Interactive Version (MIPS)
- Discrete Mathematics
- Introduction to MATLAB
- Programming in Python 3

with zyLabs
zyBooks Today

- 650 UNIVERSITIES
- 3,000 INSTRUCTORS
- 750,000+ STUDENTS

- NSF and Dept of Ed SBIR grants
- 18 peer-reviewed research papers
- 80 employees
  - ~10 with PhDs, 50% women
- Los Gatos, CA based
- Now a Wiley Company
Growth: Institutions & Students

# Universities/Colleges

Student Subscriptions

<table>
<thead>
<tr>
<th>Year</th>
<th># Universities/Colleges</th>
<th>Student Subscriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>100</td>
<td>10,000</td>
</tr>
<tr>
<td>2015</td>
<td>200</td>
<td>20,000</td>
</tr>
<tr>
<td>2016</td>
<td>300</td>
<td>30,000</td>
</tr>
<tr>
<td>2017</td>
<td>400</td>
<td>40,000</td>
</tr>
<tr>
<td>2018</td>
<td>500</td>
<td>50,000</td>
</tr>
<tr>
<td>2019</td>
<td>600</td>
<td>60,000</td>
</tr>
</tbody>
</table>
zyBooks Timeline

› Zyante Inc. founded to help improve student learning and graduation rates for CS and STEM degrees

› Piloted *Programming in C++* at UC Riverside during the summer term

› Hired first full-time employee

› Released first version of platform

› 12 zyBooks offered

› Awarded first NSF SBIR grant to address unmet needs in CS education

› Awarded second NSF Phase 1 grant

› Awarded NSF SBIR Phase II grant

› Raised seed round

› Awarded second NSF SBIR Phase II grant

› Zyante Inc. founded to help improve student learning and graduation rates for CS and STEM degrees

› Started to develop web-based authoring tools to enable collaborative authoring

› Awarded first NSF SBIR grant to address unmet needs in CS education

› Awarded second NSF SBIR Phase II grant

› Raised seed round

› Used in over 300 university courses

› Released zyLabs, a $19 program autograder add-on product
zyBooks Timeline

› Raised $2M investment round led by Bialla Venture Partners
› Significantly expanded the sales team, hiring a sales veteran and 10 Account Executives, with dedicated focus on large online schools
› Hired a math team

2016

› Implemented Salesforce CRM to enhance productivity and expanded data mining capabilities

2017

› Increased on-campus presence from 0 to 5 full-time Strategic Account Managers and a few Field Account Executives

2018

› Continued hiring, growing team from 42 FTEs / 6 PTEs to 60 FTEs / 22 PTEs
› Introduced new processes for enhanced operation efficiencies and more automation
› 39 zyBooks Offered
› Awarded SBIR Phase I grant from Department of Education

2019

› The Company was acquired by Wiley to help it have larger impact
› Since 2012, over 600,000 students at more than 600 colleges and universities have used zyBooks
Key elements of our story
The founding team

Frank Vahid

Smita Bakshi
The leadership team: functional excellence

Roman Lysecky
Content

Bailey Miller
Engineering

Alex von Rosenberg
Sales & Marketing

Kallee Noel
Finance/Ops

Claudia Amendt
HR

William Hendee
Sales
The timing

The Year of the MOOC

By LAURA PAPPANO  NOV. 2, 2012

The Hard Part of Computer Science? Getting Into Class
Finding product-market fit

Spring 2012

20-years of experience

Summer/Fall 2012

Prototype

$35 / student
3 schools, 500 students
$19,000 in sales

Spring 2013

~350 Leads
If you build this, I will come
The business case

What’s in it for me?

Student
- Helps me learn
- More fun
- Lower cost

Instructor/TA
- Students prepare before class
- Less grading
- More fun

Department/University
- Affordability Initiatives
- STEM retention
- Consistency
Clear company differentiators

For Professors, by Professors
10 PhDs on staff

Rigorous, scientific approach
Data is the third pillar
Evidence-based
20+ peer-reviewed papers
zyBooks.com/research

Focus on Innovation
Browser-based tools
Adaptive auto-graded HW
Automated hints
Continual improvement
Clear product differentiators

Interactive, Feedback-rich experience

Integrated Learning & Assessments

Continuous, Data-driven “Publishing”

- Feedback buttons throughout
- Top-10 lists
- Support sits with engineering
Company values: celebrate student success

• Students first, instructors a close second

• United

• Positive

• Own & Excel

• Responsive
Focus

Computer Science/Engr

- Engineering
- Maths
- Statistics
- Physics

Higher Education

- k-12
- Corporate Training
- Direct-to-learner
- Library
Our future

Desire for greater impact
What Worked for Me
I Foster my Growth Mindset

**GROWTH MINDSET**

“Failure is an opportunity to grow”

“I can learn to do anything I want”

“Challenges help me to grow”

“My effort and attitude determine my abilities”

“Feedback is constructive”

“I am inspired by the success of others”

“I like to try new things”

**FIXED MINDSET**

“Failure is the limit of my abilities”

“I’m either good at it or I’m not”

“My abilities are unchanging”

“I don’t like to be challenged”

“My potential is predetermined”

“When I’m frustrated, I give up”

“I stick to what I know”

“I can either do it, or I can’t”

“Feedback and criticism are personal”
I Take Risks, Embrace Change

The unknown is scary, but I ask “what is the worst that can happen”

A Technical background is a great launchpad

Keep the boundaries blurred ... look beyond

Go with my gut ... experiment
I Own my Future

SPEAK UP

PERSEVERE

FOCUS, HEADS-DOWN
Relationships: THE most important thing

At work: Connections & Friendships

I Found Mentors
Why get a STEM degree?
Impact the World
Dynamic career .... Forever Learning
## 15 Best-Paying Jobs For Recent Graduates

<table>
<thead>
<tr>
<th>JOB TITLE</th>
<th>MEDIAN PAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Electrical Engineer</td>
<td>$61,400</td>
</tr>
<tr>
<td>2. Software Developer</td>
<td>$59,800</td>
</tr>
<tr>
<td>3. Mechanical Engineer</td>
<td>$58,000</td>
</tr>
<tr>
<td>4. Business Analyst, IT</td>
<td>$54,400</td>
</tr>
<tr>
<td>5. Supply Chain Analyst</td>
<td>$51,300</td>
</tr>
<tr>
<td>6. Civil Engineer</td>
<td>$51,000</td>
</tr>
<tr>
<td>7. Financial Analyst</td>
<td>$50,600</td>
</tr>
<tr>
<td>8. Auditor</td>
<td>$50,000</td>
</tr>
<tr>
<td>9. Operations Manager</td>
<td>$47,200</td>
</tr>
<tr>
<td>10. Data Analyst</td>
<td>$47,000</td>
</tr>
<tr>
<td>11. Web Developer</td>
<td>$45,900</td>
</tr>
<tr>
<td>12. Assistant Project Manager, Construction</td>
<td>$45,300</td>
</tr>
<tr>
<td>13. Insurance Underwriter</td>
<td>$44,600</td>
</tr>
<tr>
<td>14. Buyer</td>
<td>$43,800</td>
</tr>
<tr>
<td>15. Technical Writer</td>
<td>$43,500</td>
</tr>
</tbody>
</table>

Economic Independence

Freedom

Choice
Gender equality matters

Women are half the population, and are equally capable ... but, represent only 20% in tech

Diversity leads to superior products, superior teams, superior organizations
Thank You