

Overview

# **Developer Profile**

I. Geography

(https://stackoverflow.com/?ref=survey-2018)

#### II. Developer Roles

### eveloper Survey Results III. Experience

IV. Education

V. Demographics

2018

VI. Connection and Competition

VII. Life Outside Work

Technology

Work

Community

Methodology

Back to top



## Overview

#### Take control of your job search.

Stack Overflow Jobs puts developers first. No recruiter spam or fake job listings.

Browse jobs (https://stackoverflow.com/jobs)

This year, over 100,000 developers told us how they learn, build their careers, which tools they're using, and what they want in a job.

#### Find your next developer.

Source, attract and recruit developers on the platform they trust most.

Learn more (https://www.stackoverflowbusinessnicsnyretate.wt)e covered a few new topics ranging from artificial intelligence to ethics in coding. Here are a few of the top takeaways from this year's results:

#### Your private version of Stack Overflow.

Create a secure space for your engineering team to ask and answer private questions.

Learn more (https://stackoverflow.com/teams)

developers took the 30-minute survey this past January.

Each year, we ask the developer community about everything from

their favorite technologies to their job preferences. This year marks the eighth year we've published our Annual Developer Survey

results—with the largest number of respondents yet. Over 100,000

- · DevOps and machine learning are important trends in the software industry today. Languages and frameworks associated with these kinds of works are on the rise, and developers working in these areas command the highest salaries.
- · Only tiny fractions of developers say that they would write unethical code or that they have no obligation to consider the ethical implications of code, but beyond that, respondents see a lot of ethical gray. Developers are not sure how they would report ethical problems, and have differing ideas about who ultimately is responsible for unethical code.



- Developers are overall optimistic about the possibilities that Staclartificial intelligence offers, but are not in agreement about what the dangers of Al are.
- Python has risen in the ranks of programming languages on Overviewour survey, surpassing C# in popularity this year, much like it surpassed PHP last year.
   Developer Profile
  - When assessing a prospective job
- I. Geogra(htt/ps://www.stackoverflow.com/jobs), different kinds of
- II. Developer Roles apply different sets of priorities. Women say their highest priorities are company culture and opportunities for
- III. Experience professional development, while men say their highest
- IV. Educationiorities are compensation and working with specific
- V. Demographics

VI. Connection and Competition

Want to dive into the results yourself? We made the anonymized 
VIELITE OF SIDE OF THE SURVEY OF THE

#### Community



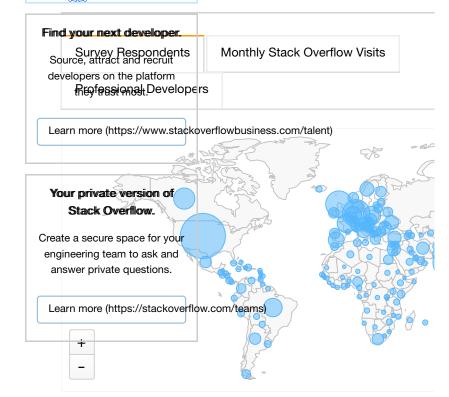
# Take control of your job search.

who are writing the script for the

Stack Overflow Jobs puts developers first. No recruiter spam or fake job listings.

Browse jobs (https://stackoverflow.com/jobs)

## Geography



Each month, about 50 million people visit Stack Overflow to learn, share, and build their careers. We estimate that 21 million of these people are professional developers and university-level students. Overview Our estimate of professional developers comes from the things Developmental do (https://kevinmontrose.com/2015/01 I. Geography visit Stack Overflow. We collect data on user activity to help surface II. Developer Roles jobs We think you might find interesting and questions we think you Illcarparismer. You can download (https://stackoverflow.com/users //prediction-data) and clear this data at any time. V. Demographics VI. Connection and Competition VILLE Out Developer Roles Technology Work Developer Type Community Methodology Back-end developer 57.9% Back to top 
Full-stack developer 48.2% Take Econtrol of Cookington 37.8% search. Mobile developer 20.4% Stack Overflow Jobs puts developskitopsenventerprise 17.2% applications developer spam or fake job listings. Student 17.1% Browse jobs (https://stackoverflow.com/jobs) administrator Designer 13.1% Find your next developer. 11.3% Source, attract and recruit DevOps specialist developers on the platform 10.4% they trust most. Data or business 3.2% analyst Learn more atta scientist. stackove Mowbusiness.com/talent) machine learning specialist QA or test developer 6.7% Your private wersion of 5.7% Stack Overflow. Embedded 5.2% Creatapalseationspacedevicesur engineering team 48 48 PRA answer Game or graphics developer 5.0%

Product manager

(CEO, CTO, etc.)

Educator or academic

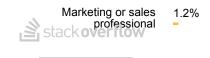
Learn more (https://stackoverflow.com/teams)

researcher
C-suite executive

4.7%

4.0%

3.8%



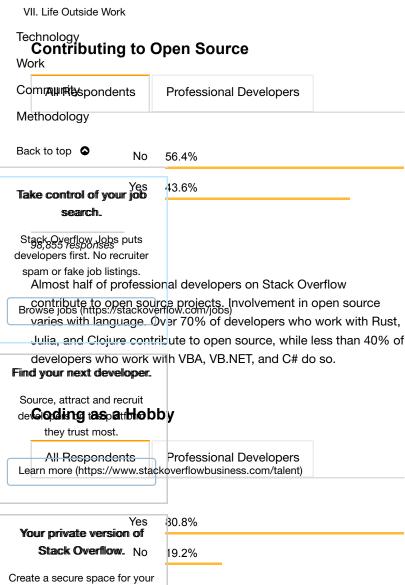
92,098 responses; select all that apply

Dexelogeoff of the respondents identify as back-end developers

I. (https://stackoverflow.com/jobs?sort=i&q=back-end+developer),
and about 20% consider themselves mobile developers. The

III. Developer Roles
median number of developer type identifications per respondent is

III 2 Fandiane most common pairs are combinations of back-end,
Intredicench and full-stack developer. Pairs that are highly correlated
vare database administrator and system administrator, DevOps
specialist and system administrator, and designer and front-end
VI developer.

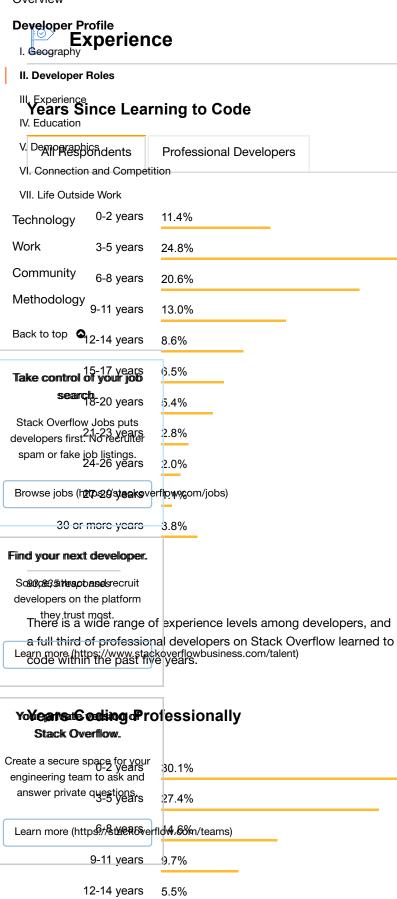


Lettanged the spote work through the work of our respondents say that they code as a hobby. Other interests or responsibilities outside of software don't seem to reduce developers' interest in coding as a hobby. Those who said they are

engineering team to ask and an \$8,055 private assistions.

parents or have other caretaking responsibilities, those who exercise daily for those who spend the most time outside were slightly *more* likely to code as a hobby than other groups.

Overview





VI. Connection and Competition

Over half of respondents have five years of professional coding

VII. Life Outside Work experience or less. Developers who work with languages such as

Technothand Perl have the most years of professional coding

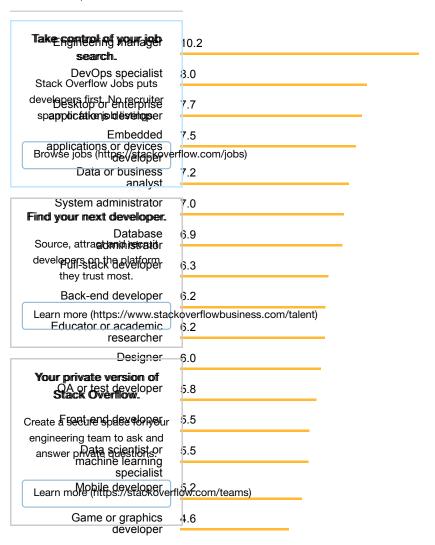
experience, while developers who work with languages like Matlab, Work

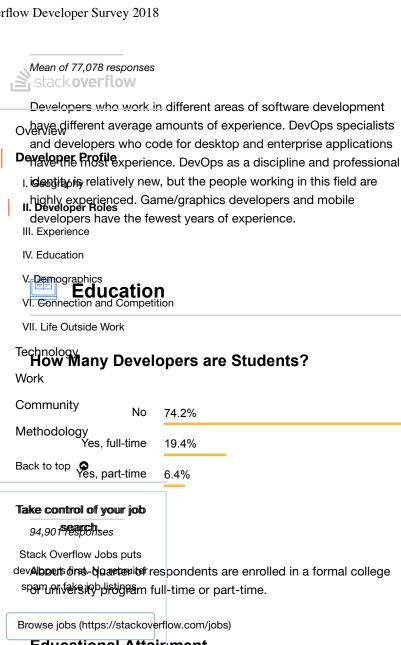
Haskell, and Kotlin have the fewest.

Community

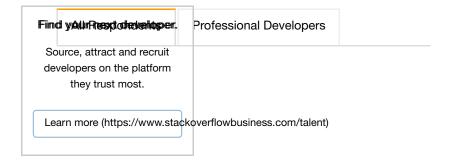
Methodology

# Years of Professional Coding Experience by Balleyeloper Type





#### **Educational Attair ment**

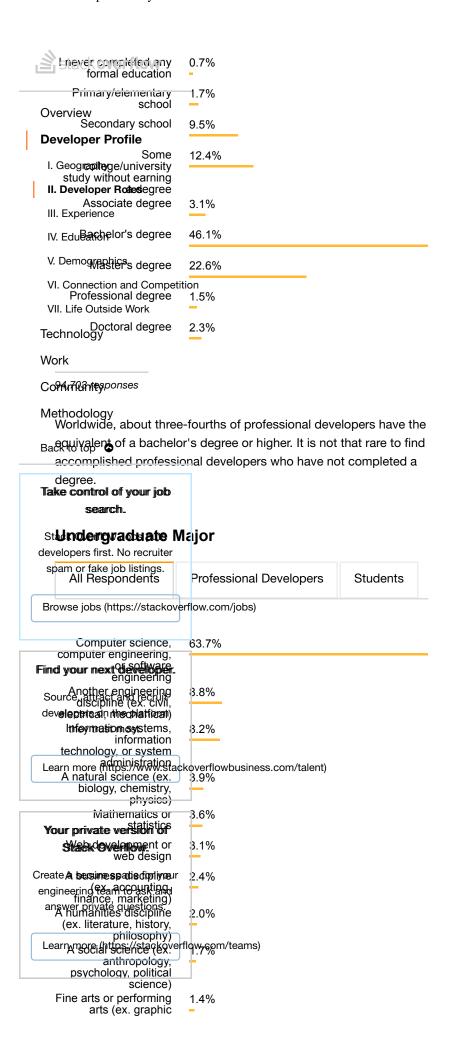


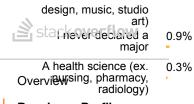
## Stack Overflow. Create a secure space for your

Your private version of

engineering team to ask and answer private questions.

Learn more (https://stackoverflow.com/teams)



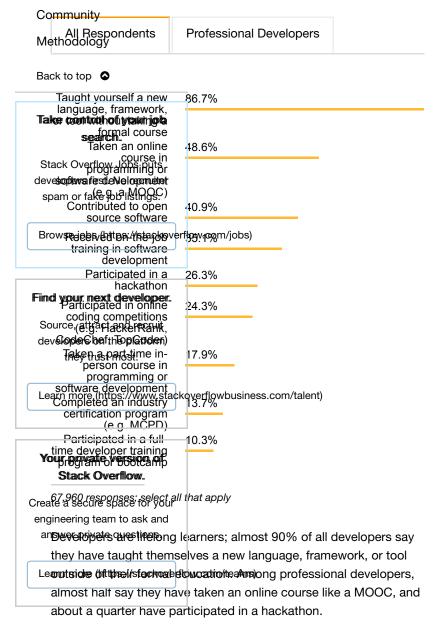


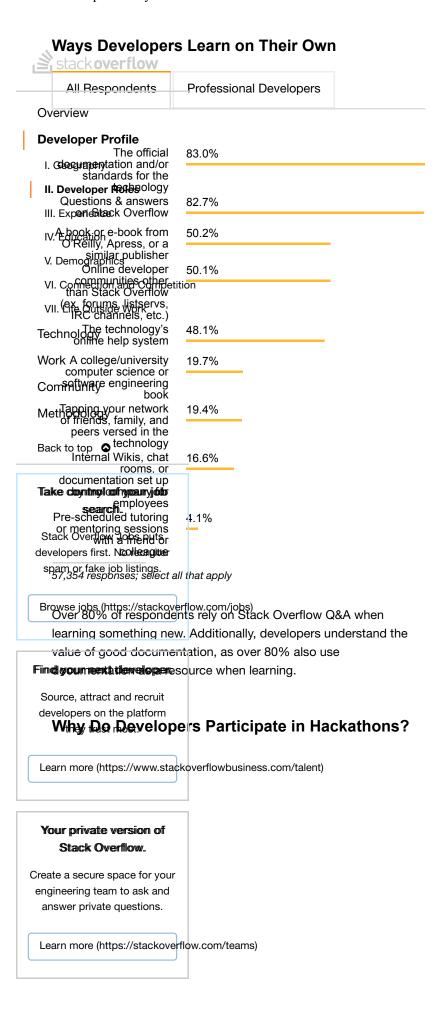
#### **Developer Profile**

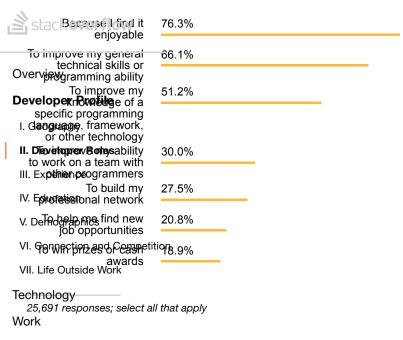
79,036 responses I. Geography

Technology

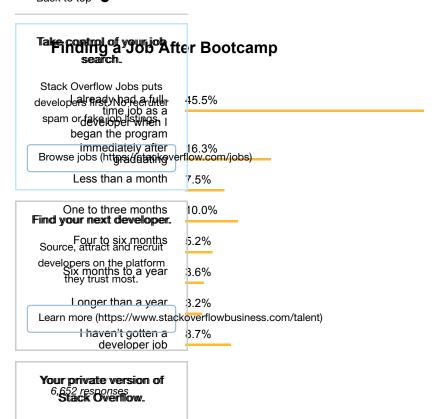
### **W**♥ ther Types of Education





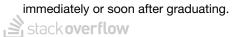


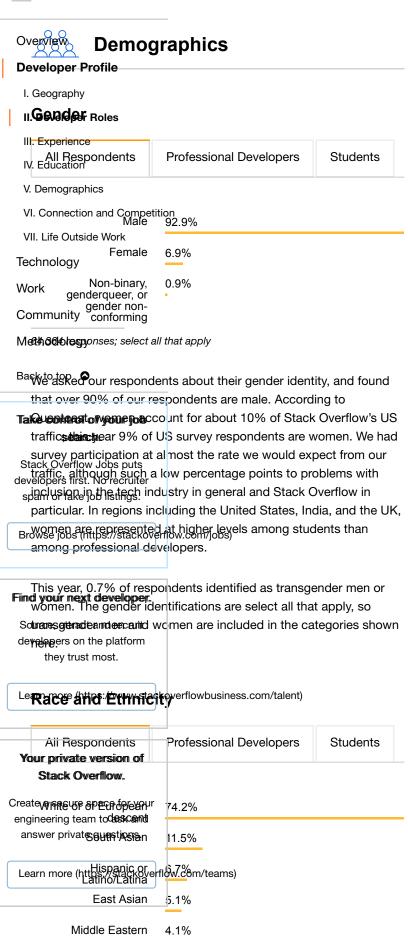
CoAmoungithe respondents who said they have participated in hackathons or online coding competitions, their number one reason Methodology for engaging is that they find them enjoyable. These are also Back to the competition of the competitio



Create a secure space for your Bootcamps are typically perceived as a way for newcomers to engineering team to ask and transition into a career as a software developer, but according to our survey, many participants in coding bootcamps were already working as developers. Almost half of our respondents who said Learn more (https://stackoverflow.com/teams) they went to a coding bootcamp said they were already working as

developers: these developers are likely updating their skills and moving to new areas of the tech industry. Of other bootcamp participants, the most common outcome is to find a job





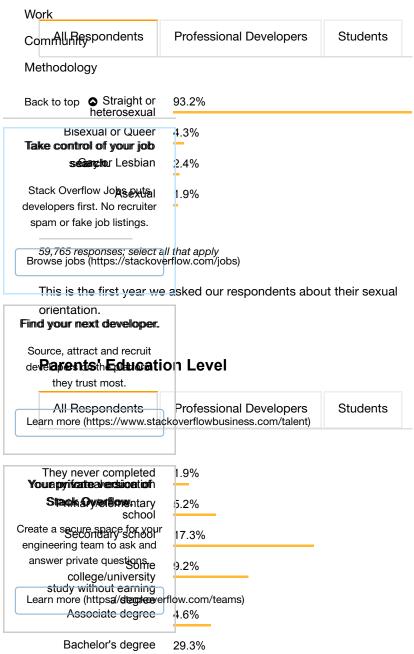


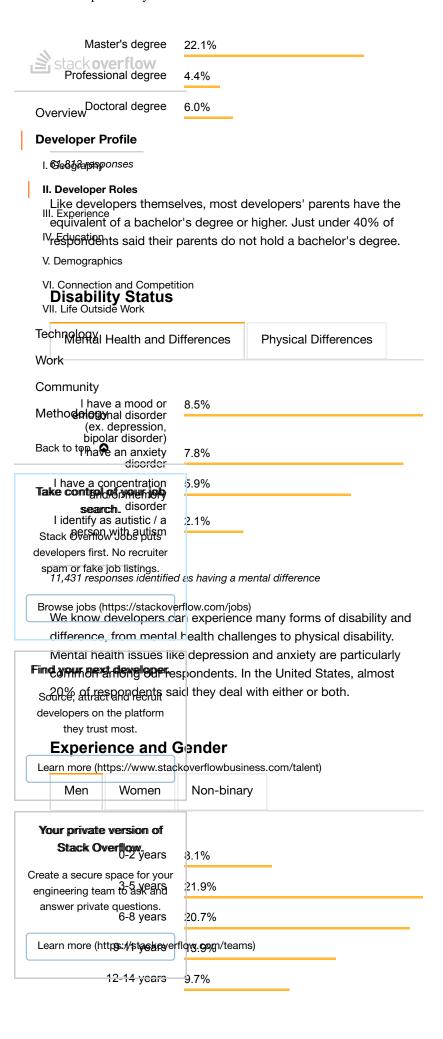
## **Developer Profile** select all that apply

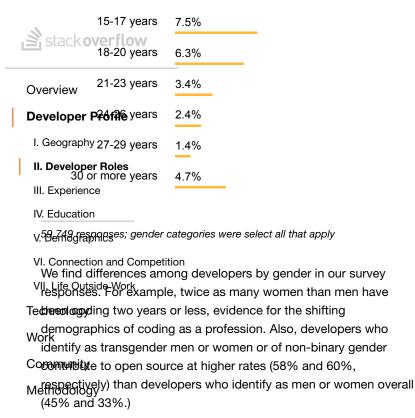
Here again we see evidence for problems with diversity and Hipavelepper Melese higher proportions of developers of color in Histogeness than professional developers. This year, 7.4% of professional developers in the United States identified as black, IV. Education Hispanic or Latino/Latina, or Native American while over 10% of V. Statementanhiche United States identified as a member of one of Vthese groups and Competition

VII. Life Outside Work

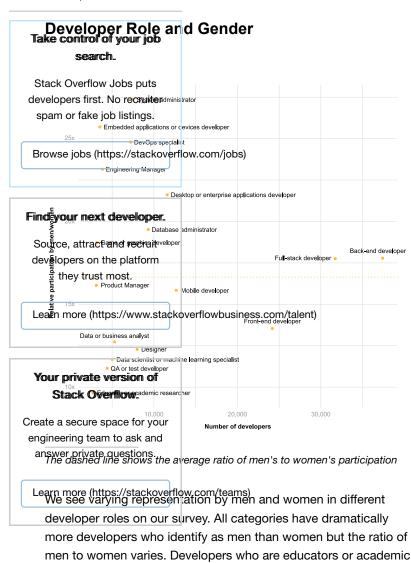
## Test and Orientation





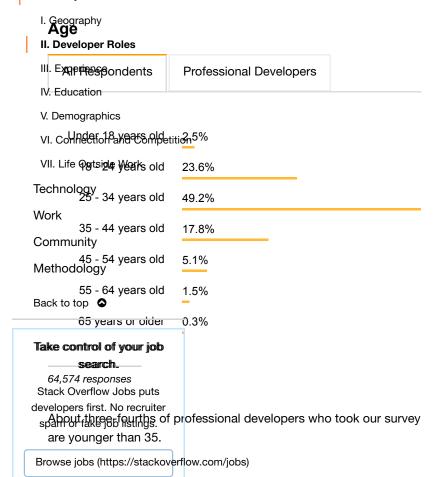


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researchers are about 10 times more likely to be men than women, while developers who are system admins or DevOps specialists are 25-30 times more likely to be men than women. Women have the highest representation as academics, QA developers, data Overview, and designers.

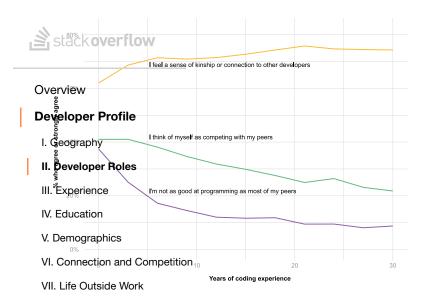
### **Developer Profile**



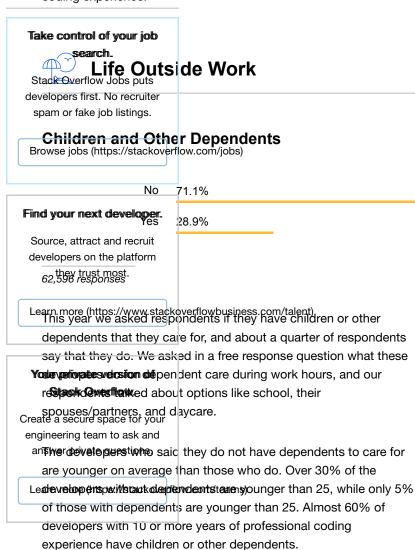
### Age and Experience by Country

Find your next developer.  Average Age  Av	verage Years of Coding Experience
Source, attract and recruit	, , , , , , , , , , , , , , , , , , ,
developers on the platform	
they trust most.	
Australia	29.0
Learn more (https://www.stac United States	koverflowbusiness.com/talent) 28.7
United Kingdom	28.2
Your private version of Canada Stack Overflow.	27.7
Germany Create a secure space for your	26.6
engineering team to ask and France answer private questions.	26.0
Brazil	25.0
Learn more (https://stackover	· ·
Russian Federation	24.7
Poland	24.6

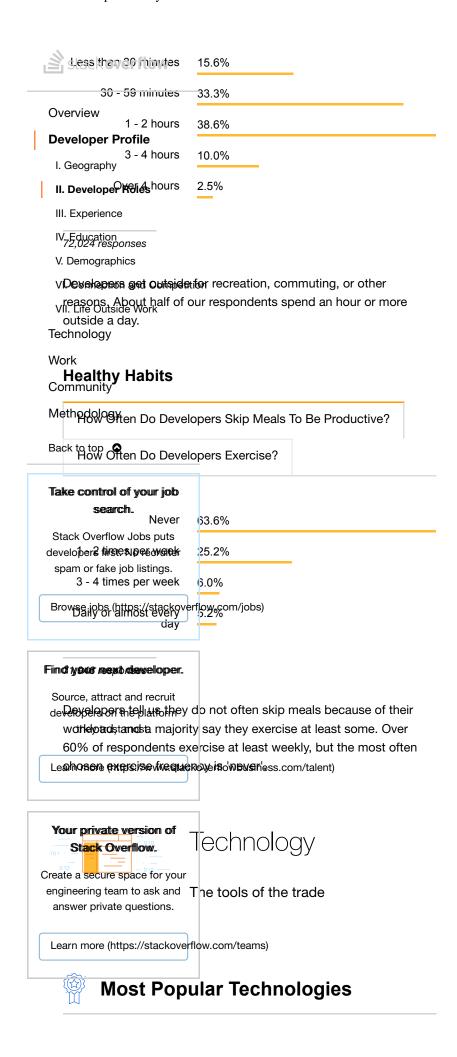
India 22.7 stack overflow Mean of 42,042 responses Developer Strife tack Overflow are older with more experience in I. Australia, countries in Western Europe, and North America and younger with less experience in countries like India and Russia. II. Developer Roles III. Experience IV. Education V. Demographics Connection and Competition VI. Connection and Competition VII. Life Outside Work Kinship, Competition, and Self-Evaluation Technology Work I feel a sense of 3.6 Conkinship or connection to other developers Methodthing of myself as competing with my 2.7 peers Back to top not as good at 2.2 programming as most of my neers Take control of your job 68,577 responses; agreement on a 1-5 scale, from strongly disagree to strongly agree Stack Overflow Jobs puts developers first. No recruiter We asked how much respondents agree or disagree with several statements about their p ace in the developer community. Overall 70% of developers agree or strongly agree that they feel a sense of Browse jobs (https://stackoverflow.com/jobs) connection with other developers. Developers are overall confident about their own skills compared to their peers, with only 18% agreeing or strongly agreeing that they are not as good at Find Working Ment of leagues. Source, attract and recruit developers on the platform Experience and Belonging Learn more (https://www.stackoverflowbusiness.com/talent) Your private version of Stack Overflow. Create a secure space for your engineering team to ask and answer private questions. Learn more (https://stackoverflow.com/teams)

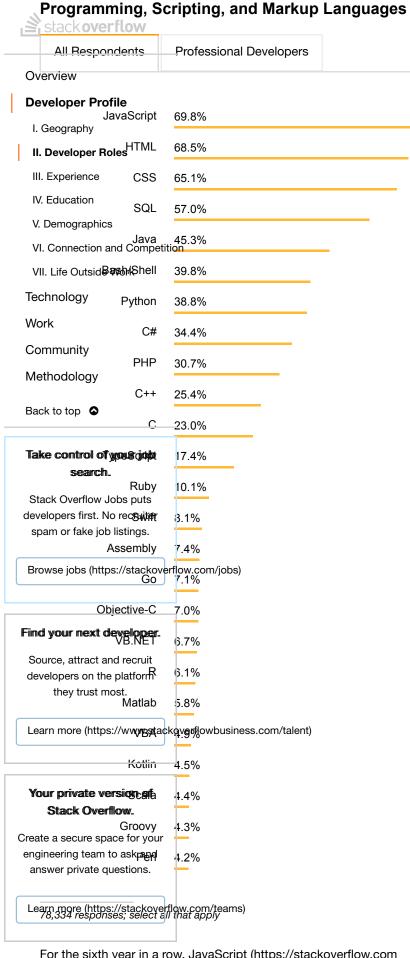


Technology Respondents' feelings on how much they belong and how they Workeck up to their peers change with how much experience they have. More experienced developers feel more connected, more community confident, and less competitive. Notice that feeling less skilled Methods by with experience while feeling less competitive drops more gradually and continues to drop into the second decade of Backboth Perience.



### What Time Do Developers Wake Up? , **≅** stack **overflow** Before 5:00 AM 2.4% Overview Between 5:00 - 6:00 12.4% **Developer Profile** AM Between 6:01 - 7:00 I. Geography 28.2% II. Desettopen Frotels-8:00 29.5% AM III. Experience Between 8:01 - 9:00 14.7% AM IV. Education Between 9:01 - 10:00 V. Demographics AM 4.8% AM VII. Lifet@etside/Morkam -0.5% 12:00 PM Technology After 12:01 PM 0.4% Work I work night shifts 0.5% Community I do not have a set Methodology schedulo 5.3% Back to top 72,146 responses Take control of your job We are confident that most developers have pulled a late night here and there, but most of our respondents say they are up by 8am. Stack Overflow Jobs puts developers first. No recruiter spam or fake job listings. How Much Time Do Developers Spend on a Computer? Browse jobs (https://stackoverflow.com/jobs) Less than 1 hour 0.3% Find your next developer 1 - 4 hours 3.3% Source, attract and recruit 30.6% developers on the platform they trust most. 9 - 12 hours 52.7% Learn more (https://www.stackqyerflowbusiness.com/talent) Your private wersion of Stack Overflow. Our respondents include people who code as professionals, Create a secure space for your engitudents and hobbyists. The overwhelmingly majority spend large antractions refutering hours on a typical day with their desktops and laptops. Learn more (https://stackoverflow.com/teams) How Much Time Do Developers Spend Outside?





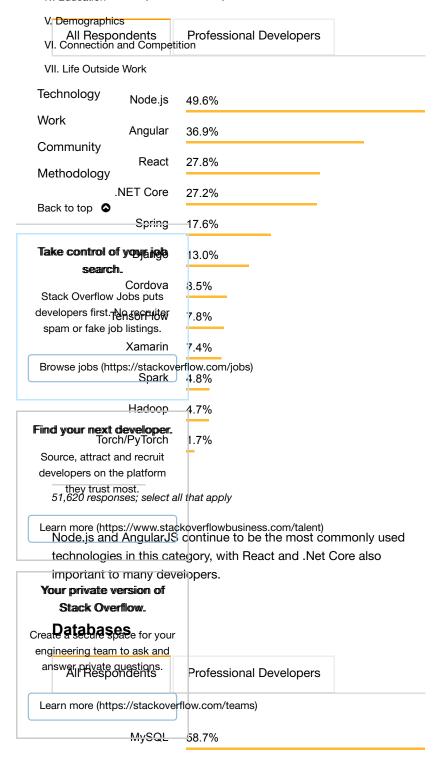
For the sixth year in a row, JavaScript (https://stackoverflow.com/jobs?sort=i&q=javascript) is the most commonly used

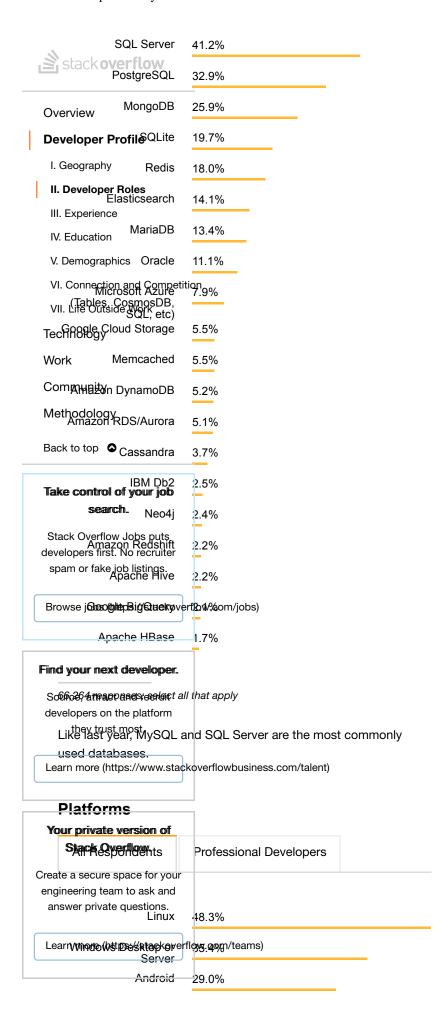
programming language. Python has risen in the ranks, surpassing C# this year much like it surpassed PHP last year. Python has a solid claim to being the fastest-growing major programming language (https://stackoverflow.blog/2017/09/06/incredible-Overviewh-python/).

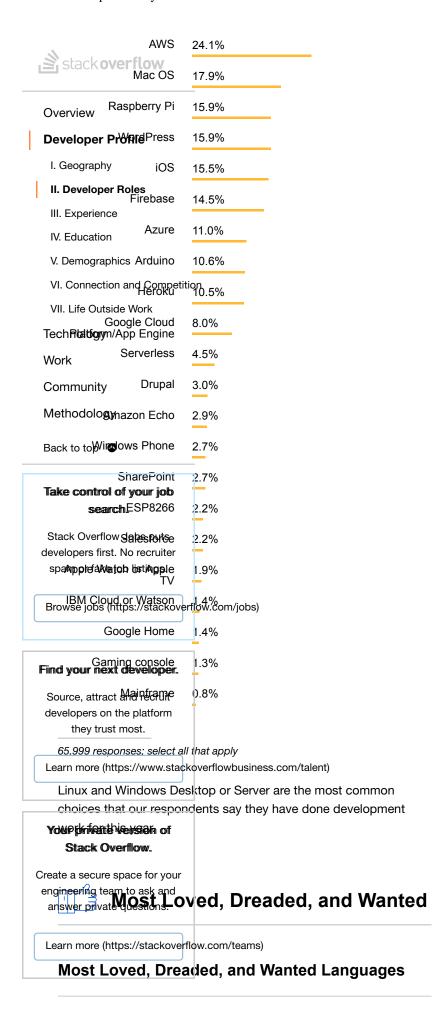
#### **Developer Profile**

- We see close alignment in the technology choices of professional developers and the developer population overall.
- II. Developer Roles
- III. Experience

### Margameworks, Libraries, and Tools







Layad Draadad	Wanted	
Loved Dreaded stack overflow	Rust	78.9%
	Kotlin	75.1%
Overview	Python	68.0%
Developer Profile	TypeScrip	t 67.0%
I. Geography  II. Developer Roles	Go	65.6%
1		
III. Experience  IV. Education	Swift	65.1%
V. Demographics	JavaScrip	t 61.9%
	C#	60.4%
VI. Connection and Competition VII. Life Outside Work		50.00/
	F#	59.6%
Technology	Clojure	59.6%
Work	Bash/She	ll 59.1%
Community	Scala	58.5%
Methodology	SQL	
Back to top		57.5%
	- HTML	55.7%
Take control of your job search.	CSS	55.1%
	Haskell	53.6%
Stack Overflow Jobs puts developers first. No recruiter	Julia	52.8%
spam or fake job listings.	Julia	
Drawa jaha (https://atsakayad	Java	50.7%
Browse jobs (https://stackoverl	R	49.4%
	Ruby	47.4%
Find your next developer.	Erlang	47.2%
Source, attract and recruit developers on the platform	C++	46.7%
they trust most.	Hack	42.1%
Learn more (https://www.stack	overflowbusiness. <b>தவு</b> /t	tale <b>nt)</b> .6%
	Ocaml	41.5%
Your private version of		
Stack Overflow.	% of devel	opers who are developing
Create a secure space for your		nguage or technology and
engineering team to ask and		ssed interest in continuin
answer private questions.	to develop	
Learn more (https://stackoverfle For the third year in a row language among our res		
		-
a language we asked ab year. This means that pro		

continue working with these than other languages.

stackoverflow

Also for the third year in a row, Visual Basic 6 ranks as the most dreaded programming language. Most dreaded means that a high Overview percentage of developers who are currently using the technology

Developer Profilerest in continuing to do so.

I. Geography

Python (https://stackoverflow.com/jobs?sort=i&q=python) is the II. Developer Roles most wanted language for the second year in a row, meaning that it III:s The Tanguage that developers who do not yet use it most often IVSEVILLE WAYNEY WANT to learn.

V. Demographics

# Viconnection and Competition Most Loved, Dreaded, and Wanted Frameworks, VLibraries, Vand Tools

Work Loved	Dreaded	Wanted
Community		
Methodology	ensorFlow	73.5%
Back to top	React	69.4%
	ch/PyTorch	68.0%
Stack Overflow Apply Public developers first. No recruiter spam or fake job listingark		66.4%
		66.0%
		66.0%
Browse jobs (htt	tps://Stackever	fiew.com/jobs)
Django		58.3%
Find your next	Angular developer.	54.6%
Source, attract and lederap developers on the platform they trust mosamarin		53.9%
		49.0%
Learn more (http	Cordova os://www.stack	40.4% coverflowbusiness.com/talent)

% of developers who are developing with the language or technology and have

Your private version of nation ing to develop with it Stack Overflow.

Creatensectile എക്കുറ്റേറ്റു പ്രം fastest growing technologies on Stack engule and reast larged by developers, while Cordova is most and readed the framework developers say they most want to work with if they do not already.

Learn more (https://stackoverflow.com/teams)

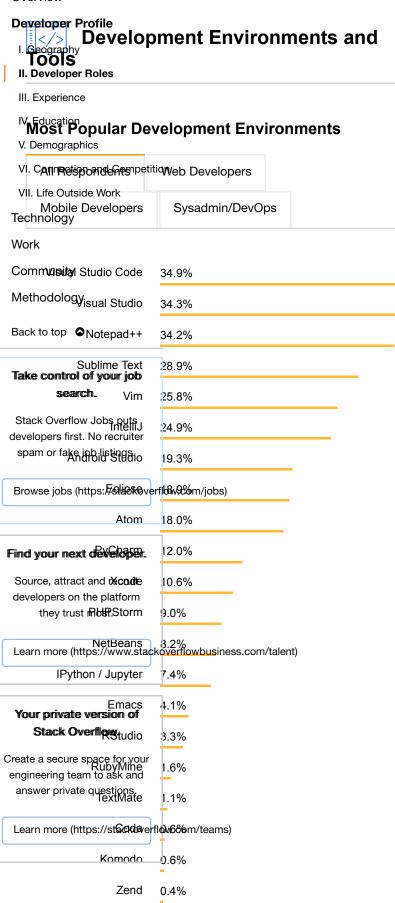
Most Loved, Dreaded, and Wanted Databases

Loved Dreaded stack overflow	d Wanted
Overview Dadia	
Developer Profile	64.5%
PostgreSQL	62.0%
I. Geography Elasticsearch	59.9%
II. Developer Roles	33.370
III. Exparent RDS/Aurora	58.8%
IV. Education crosoft Azure (Tables, CosmosDB, V. Demographic QL, etc)	56.7%
Google Cloud Storage VI. Connection and Compe	tition
VII. Life OutsidelWloomgoDB	55.1%
Technology MariaDB	53.3%
Work Google BigQuery	52.4%
SQL Server Methodology	51.6%
Amazon DynamoDB Back to top	50.9%
Neo4j	49.7%
Take control of уфигуюю search.	48.7%
SQLite Stack Overflow Jobs puts	48.1%
developers first. Nassaruiter spam or fake job listings.	46.4%
Apache Hive	46.2%
Browse jobs (https://stackov Amazon Redshift	verflow.com/jobs) 44.8%
Apache HBase	43.6%
Find your next developer.  Memcached	42.2%
Source, attract and recruit developers on the plater	36.9%
they trust most. IBM Db2	21.8%
Learn more (https://www.sta	ckoverflowbusiness.com/talent)
% of developers who are	developing with the language or technology and l
expressed interest in cont Your private version of	inuing to develop with it
<b>Stack Overflow.</b> For the second year in	n a row, Redis is most loved database,
<del>-</del>	onally more developers wanted to continu
	ny other database. IBM's Db2 offering ranl database, and for the second year in a row
MongoDB is the most Learn more (https://stackove	

Loved Dreaded Stack overflow	Wanted		
Overview Linux	76.5%		
Developer Profile Serverless	75.2%		
I. Geography AWS II. Developer Roles	68.6%		
III. Experienceaspberry Pi	67.7%		
IV. Education ESP8266	67.4%		
V. Demographics iOS	64.6%		
VI. Connection and Competit			
VII. Life Outside Work TV	64.0%		
Technology Mac OS	63.9%		
Work Firebase	63.8%		
Community Android	63.8%		
Methodology Google Cloud Platform/App Engine	62.5%		
Back to top Gaming console	61.3%		
Take Wöndrung Pyskip hous Server	61.2%		
<b>search.</b> Azure	61.0%		
Stack Overflow Jobs puts developers first. No Assistance	58.1%		
spam or fake job listings. Google Home	57.6%		
Browse jobs/https://steckove	rflow.com/jobs)		
Heroku	52.2%		
Find yourchest developer-	43.7%		
Source, attract and recruit Predix developers on the platform	39.1%		
they trust most WordPress	36.8%		
Learn mole/indpws/whoostacl	konde 2016 www. business.com/talent)		
Mainframe	31.1%		
Your private versions	30.3%		
Stack Overflow. Drupal	29.6%		
Create a secure space for your	29.070		
engineering team to ask and			
answer private questions.	aloning with the lenguage or technology and be		
expressed interest in continuous Learn more (https://stackoverl	eveloping with the language or technology and have ung to develop with it flow.com/teams)		
• •	flow.com/jobs?sort=i&q=linux) is once		
- · · · · · · · · · · · · · · · · · · ·	atform for development, with serverless		
intrastructure also loved	this year. Sharepoint is the most dreaded		

development platform for the second year in a row, and many developers as they want to start developing for the Android platform and the Raspberry Pi.

Overview



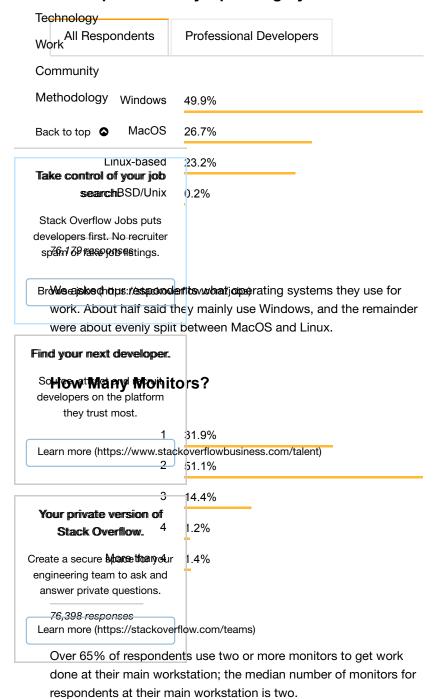


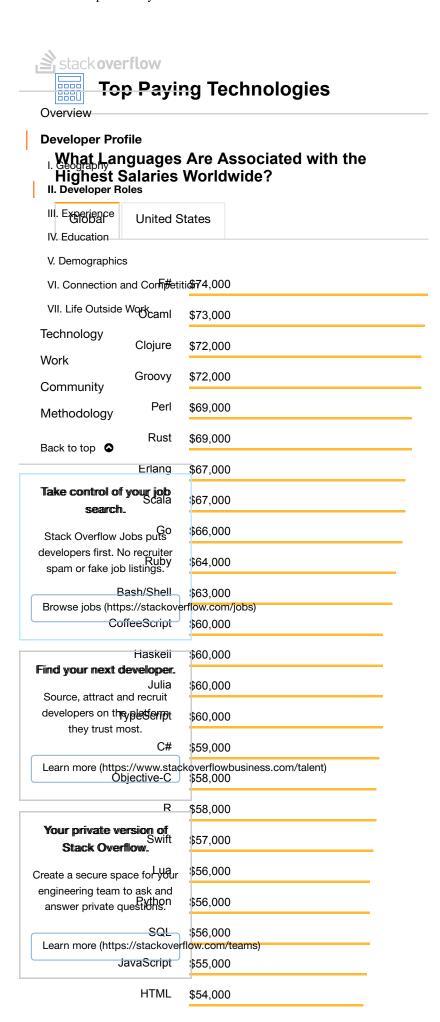
Developer Rate its de just edged out Visual Studio as the most

I. Popular developer environment tool across the board, but there are differences in tool choices by developer type and role. Developers II. Developer Roles who write code for mobile apps are more likely to choose Android III State ବର୍ଷ Xcode, the most popular choice by DevOps and INSTEARMENT is Vim, and data scientists are more likely to work in Vipermorraphics.

VI. Connection and Competition

#### ∨Developers!kPrimary Operating Systems





CSS \$53,000

Median of 56,835 responses; USD

Developer, Pesside dents who use F#, Ocaml, Clojure, and Groovy

I. earn the pighest salaries, with median salaries above \$70,000 USD.

There are regional variations in which languages are associated

II. Developer Roles

with the highest pay. Erlang and Scala developers in the US are

III after the highest paid, while Clojure, Erlang, and Haskell

INDEVELOPERS earn the most in India.

V. Demographics

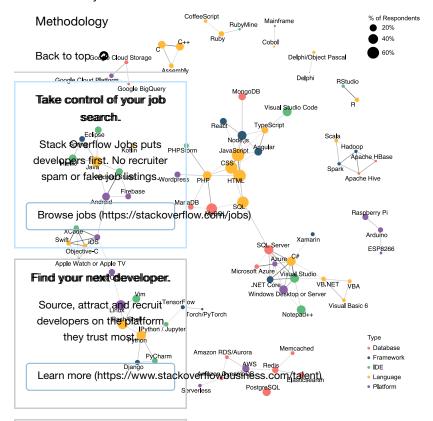
VI. Connection and Competition

## vii. Effective lated Technologies

Technology

Work

## **How Technologies Are Connected** Community



Technologies cluster together into related ecosystems that tend to your private version of be used by the same developers. In this chart we see a large Stack Overflow.

central cluster for web development (with JavaScript, HTML, and Crea@9S) commented via QL to one for Microsoft technologies (with engine, rividual stadist, and .N ET Core). Along the left we see a answer private questions. Java, Android, and iOS across to Linux, bash/shell, and Python. Other smaller correlated clusters include Legenary statics. Corectly, and with technologies that include language-specific IDEs.



## Technology and Society

Overview

#### **Developer Profile**

# What Do Developers Think Is Dangerous and Exciting About AI?

#### II. Developer Roles

III. Experience Dangerous IV. Education	Exci	ting		
V. Demographics				
VI. Co Algerithman makingetiti 28.6% important decisions				
VII. Life Outside Work	28.0%	6		
surpassing human Technologitelligence ("the singularity")				
Workvolving definitions of "fairness" in	23.7%	6		
Comm <b>algby</b> ithmic versus human decisions				

19.8%

Back to top

63.115 responses

#### Take control of your job

Metheraping automation

of jobs

Somestants of developers are involved in the increasing role of machine learning and artificial intelligence in the world today, so we stack Overflow Jobs puts asked developers what they think is dangerous and exciting about evelopers first. No recruiter sphere tach policy increasing a not much consensus among developers about what is most dangerous; each answer was browse jobs (https://stackoverflow.com/obs/)ce for what is exciting about increasing Al is that jobs can be automated.

# Find The Partial Responsible for Considering sothe Ramifications of AI?

developers on the platform
they trust most.

The developers or the
people creating the Al
Learn more (https://www.stackoverflowbusiness.com/talent)
A governmental or
other regulatory body

Prominent industry 16.6% leaders

Your private version of Nobody Stack Overflow.

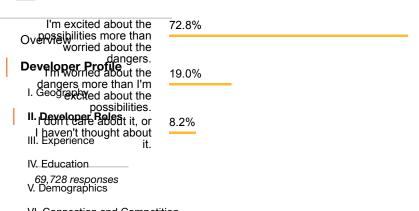
7.7%

Create a secure space for your engineering team to ask and answer private questions.

Developers are most likely to think that the creators and Learn more (https://stackoverflow.com/teams) technologists behind the machine learning and AI algorithms are the ones who are ultimately most responsible for the societal issues surrounding artificial intelligence. About a quarter of respondents

think that a regulatory body should be primarily responsible.

# How Do Developers Feel About the Future of Al? stackoverflow



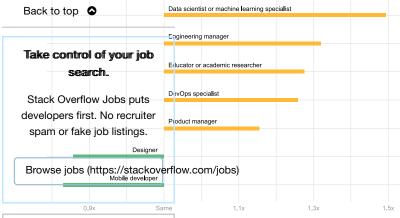
VI Connection and Competition
Developers are mostly optimistic about the possibilities that
Vartific Quisites Myerice offers our world, with almost three-fourths of

Terespondents saying that they are overall more excited than worried about the Al future.

Work

#### Community

## Al Concerns by Developer Type Methodology



Relatively more vorried about fairness compared to the singularity

Find your next developer.

More worried about...

Source, attracernand recruingularity

Source, a<mark>ttr</mark>acีซ้าลิทิd recrนิทิ<sup>อนlarity</sup> developers on the platform

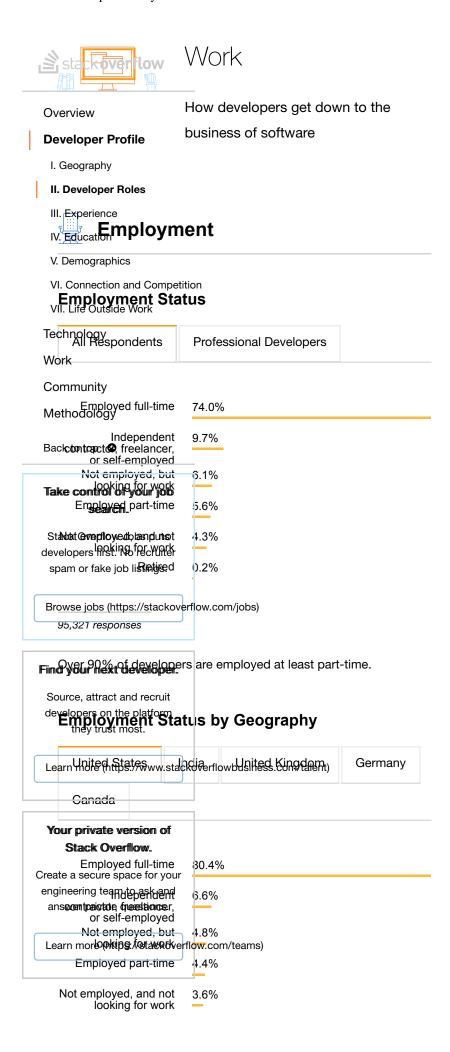
they trust most. The concerns that developers bring to issues around artificial

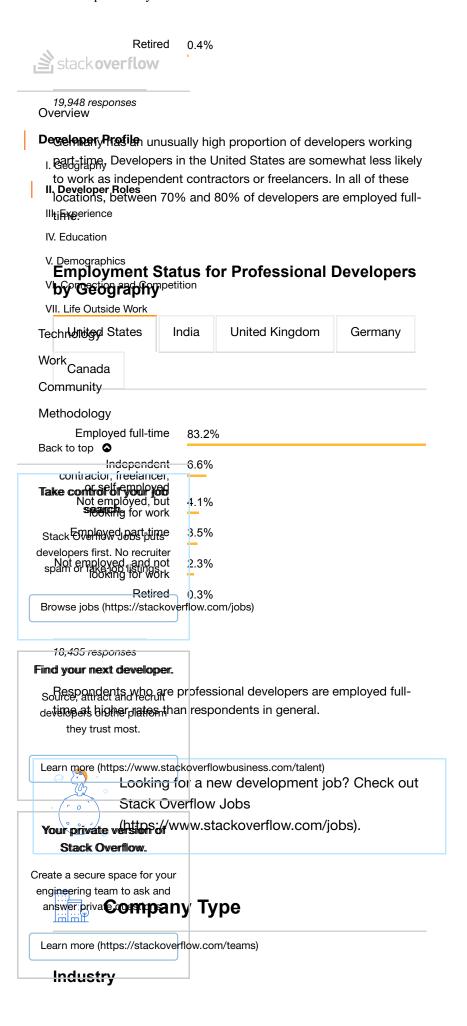
intelligence depend on the kind of coding work they do. For Learn more (https://www.stackoverflowbusiness.com/talent) example, data scientists are 1.5 times more likely to consider

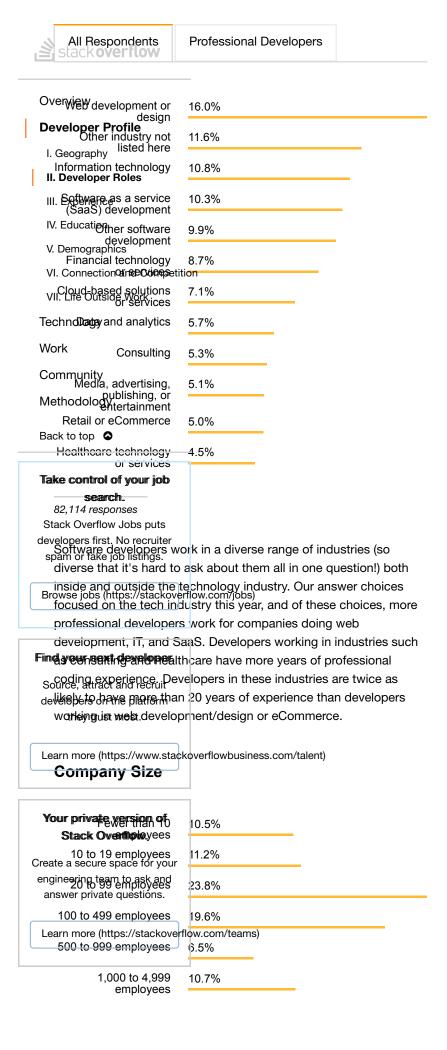
issues around algorithmic fairness dangerous than any upcoming singularity when computers become more intelligent than people,

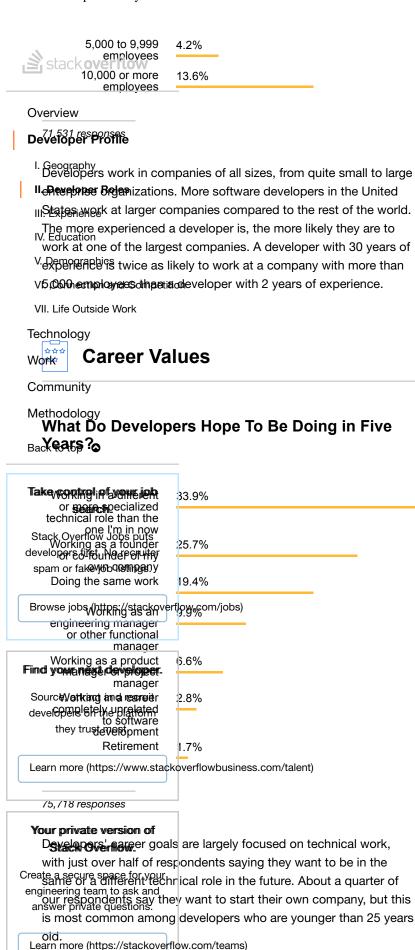
Your private version of developer. We included a free response of the control of

Learn more (https://stackoverflow.com/teams)

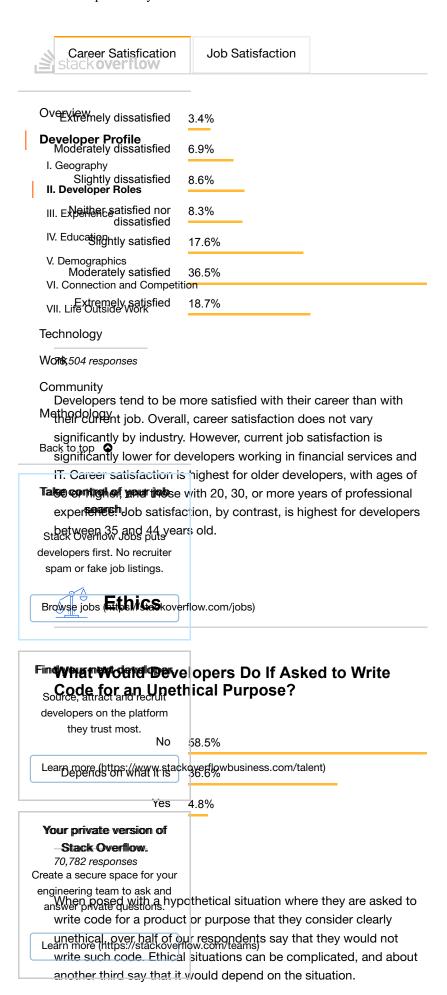




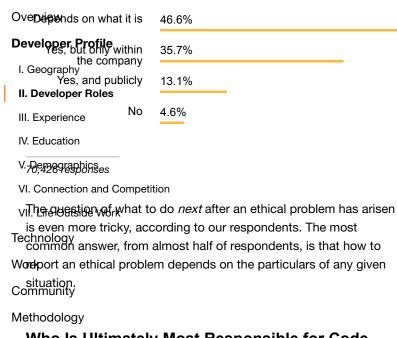




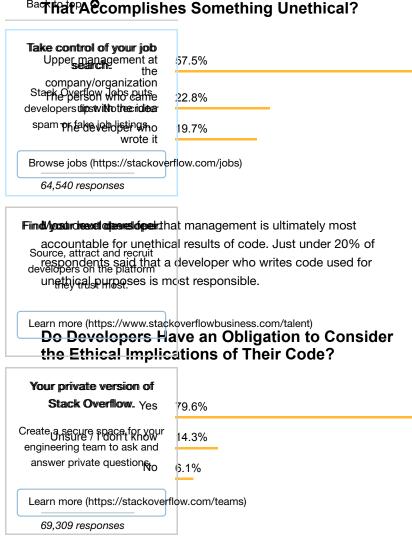
How Do Developers Feel About Their Careers and Jobs?



#### **How Would Developers Report Ethical Problems** with Gode flow



#### Who Is Ultimately Most Responsible for Code <sup>Ba</sup>ተከät<sup>p</sup>A**c**complishes Something Unethical?



Almost 80% of respondents affirm that considering what their code

said they were unsure about this were 40% more likely to also say that they do not need to report any ethical problems. Overview We included a free response opportunity after this question, and we Descelopers. These include I. responses about how the tools developers build are powerful and come with a lot of responsibility, situations where unethical II. Developer Roles outcomes may accidentally arise, and how large teams are involved Illin Experitating software but developers can be the last line of defense Ivagainstiunethical code. V. Demographics VI. Connection and Competition villie ou Looking for a Job Technology Work Job Search Status Community Methodology I'm not actively 59.8% looking, but I am open Back to top portunities I am not interested in 24.3% new job opportunities Take controliply 15.9% search. for a job Stack Overflow Jobs puts dev**@9o486**srfissatoNsaesecruiter spam or fake job listings. Only 16% of respondents are actively looking for a job, but about Browsei Poulttes of steel of the service and the service of the se opportunities. Find your next developer. Job Search Status by Geography Source, attract and recruit developers on the platform tulevite de Strates India United Kingdom Germany Learn (1981) (1981) Learn (1981 Your private vetsich et looking but Lam open Stare Vor borwnities 56.4% I am not interested in 29.4% Createnesse pulse oppose un introduction of the control of the con engineering team to ask and 14.2% answer private questiansb Learn more (https://stackoverflow.com/teams) 17,706 responses

can be used for is the right thing for developers to do. Those who

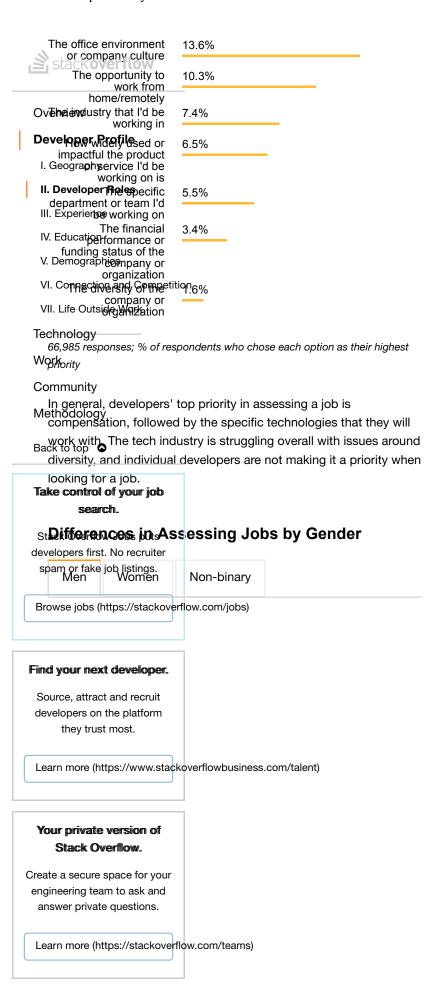
Job seeking status is largely consistent across these regions.

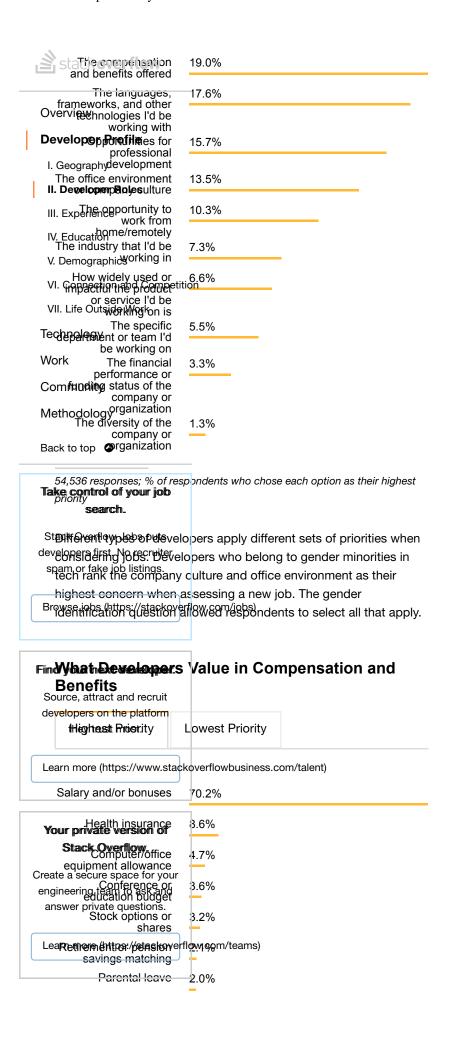
# Who's Actively Looking for a Job? stack overflow

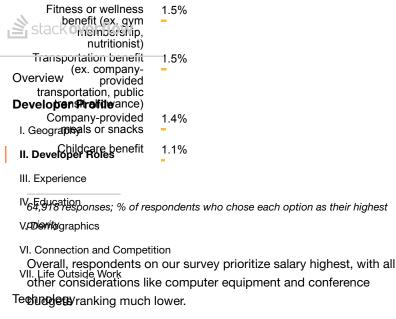
Educator or academic Overview researcher	18.5%
Mobile developer  Developer Profile	18.1%
I. Geografia scientist or	18.0%
specialist II. Developer Roles Data of business	17.9%
III. Experience analyst  Game or graphics	17.9%
IV. Education developer	
V. Demographics Designer VI. Connacting สอง ต่อกอุetiti	17.7%
	46.0%
VII. Life Outside Work Database Technology administrator	15.6%
Back-end developer	15.4%
Work	15.3%
Community  Community	13.376
Meth <b>็bdb/stg</b> yk developer	15.2%
Back to top Embedded applications or devices	14.8%
developer	
System administrator <b>Take control of your job</b>	14.5%
Desl <b>ace of</b> enterprise applications developer	14.4%
Stack Overflow Jobs puts Engineering manager developers first. No recruiter	13.6%
spam opfako job specialist	13.5%
Browse jBb9(HKbs:)#Shades5ver	flow@m/jobs)
C-suite executive (CEO, CTO, etc.)	12.0%
Find your next developer.	
source, att. 76,354 responses	
developers on the platform	
Antonydrustional dev	elopers, those who work at the C-level and
as engineering manager	s or product managers are looking for work
Lettre meas th the very every and	প্রাধনাঞ্জিপান্ধার de diata scientists
(categories that we know	often overlap) are looking for work at
higher proportions.	_ _
Your private version of	
Stack Overflow.	
Create a sector space for your	d Developers Last Change
engineering team to ask and	
answer private questions.	
Less than a year ago Learn more (https://stackoverf	34.6% low.com/teams)
Between 1 and 2  years ago	22.0%
Between 2 and 4	18.8%
years ago	10.070



salary	4.3%
stack overflow getting	4.2%
Overview process	3.5%
Developer Priofigration	3.4%
I. Geography application	3.3%
II. Developer Roles employer	3.2%
III. Experience	3.2%
IV. Education	<u> </u>
V. Demographiexperience VI. Connection and Competi	3.1% tion
VII. Life Outside Work	~ <del>3.1%</del>
resume Technology	2.9%
Work response	2.9%
Community waiting	2.9%
Methodology offer	2.7%
Back to top • people	2.7%
Stack Overflow Jobs puts We asked developers of developers first. No recruiter exhausting, interesting spam or take job listings. for a new job in separa  said the positive aspect	on Stack Overflow what they find annoying, and exciting about the process of searching te free response questions. Respondents ts of searching for a new job include the enflow.com/jobs)
can offer On the other processes around inter	hand, they expressed frustration with broken views and recruiting.
Find your next developer.	John Sand 1991 anning.
Source, attract and recruit developers on the platform	rities
developers on the platform	rities  skoverflowbusiness.com/talent)
developers on the platform	
developers on the platform	skoverflowbusiness.com/talent)
Learn more (https://www.stac	ers Assess Potential Jobs?
Learn more (https://www.stace	ekoverflowbusiness.com/talent)  ers Assess Potential Jobs?  Lowest Priority  18.3%
Learn more (https://www.stace	ekoverflowbusiness.com/talent)  ers Assess Potential Jobs?  Lowest Priority  18.3%

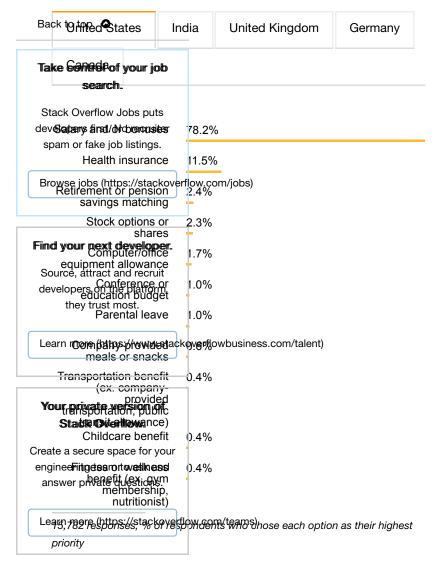






Work

### <sup>Co</sup>Vสีโปก็ฟัg Compensation and Benefits by м**⊕eogra**phy



The specifics of how developers are compensated with salary and

benefits work differently across the world, so developer responses vary by coography. Health insurance is prioritized in countries without a national healthcare system (like the United States), and computer equipment allowances are unusually important to Ova Wellens in India and the UK.

#### **Developer Profile**

I. Geography

#### II Develop Development Practices

III. Experience

IV. Education

#### ∨What Doc Developers Use to Stay Comfortable While Working? VI. Connection and Competition

VII. Life Outside Work

Technologymic keyboard 52.2% or mouse Work Standing desk 50.4%

Committee or 22.4%

Methodology Fatigue-relieving floor

12.4%

Back to top

34,058 responses; select all that apply

#### Take control of your job

Standing desks are not confined to trendy Silicon Valley offices; Stacke Pleatificant deliverests ondernts say they use one, almost the same developeration Who custon device like an ergonomic keyboard or mouse. spam or fake job listings.

## BrWhich Methodologies Do Developers Use?

All Respondents Find your next developer.	Professional Developers
they trust most.  Scrum  Learn more (https://www.stacke	35.4% 62.7% overflowbusiness.com/talent) 35.2%
Pair programming Your private version of Stack Overlanming (XP)	28.4% 15.7%

Create Paralistandard auchur 15.1% engineering learn to ask and learn to ask and waterfall answer primateholdestignes) Lean 9.6% Learn more (https://stackoverflow.com/teams) Evidence-based 3.5% software engineering Mob programming 3.3%



58,981 responses; select all that apply Overview

**Dexiglement Psefile** are popular methodologies for developers to keep <u>I. their projects</u> on track.

II. Developer Roles

V. Demographics

# IIIHowing Do Developers Expect New Coworkers Integrated to Be Productive?

VII. Life Outside Work
One to three months
Technology
Three to six months
Work
Six to nine months
Community

Methodology
More than a year
Back to top

VII. Life Outside Work
44.7%

44.7%

5.1%

17.4%

17.4%

17.4%

17.4%

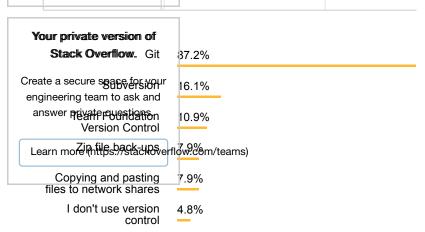
#### Take control of your job \$1,872 responses search.

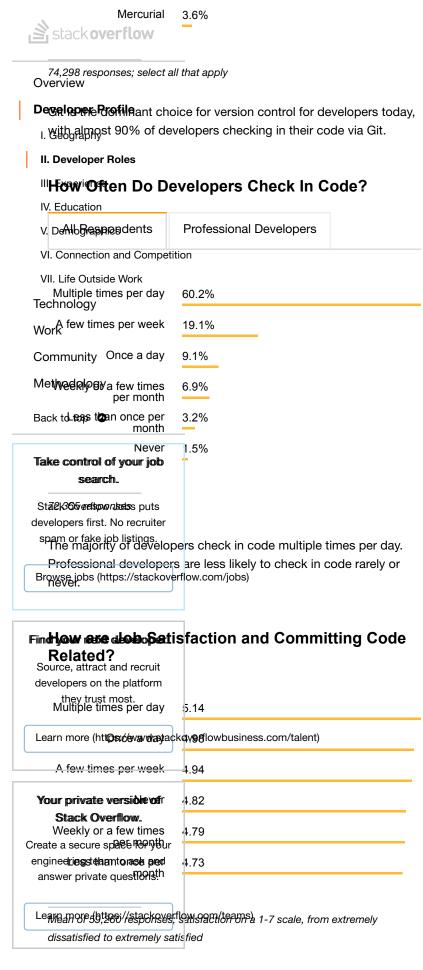
State Ostaled out the spender to imagine they had a new coworker developers listing the spender to estimate how long that person would take to become fully productive and contribute at a typical level. About three-fourths of Browselope is the compact of the Hypothetical new coworker would be fully up to speed within three months or less. Looking to reduce tribal knowledge, onboard faster, and speed up development?

# (https://www.stackoverflowbusiness.com/enterprise). Source, attract and recruit developers on the platform they trust most.

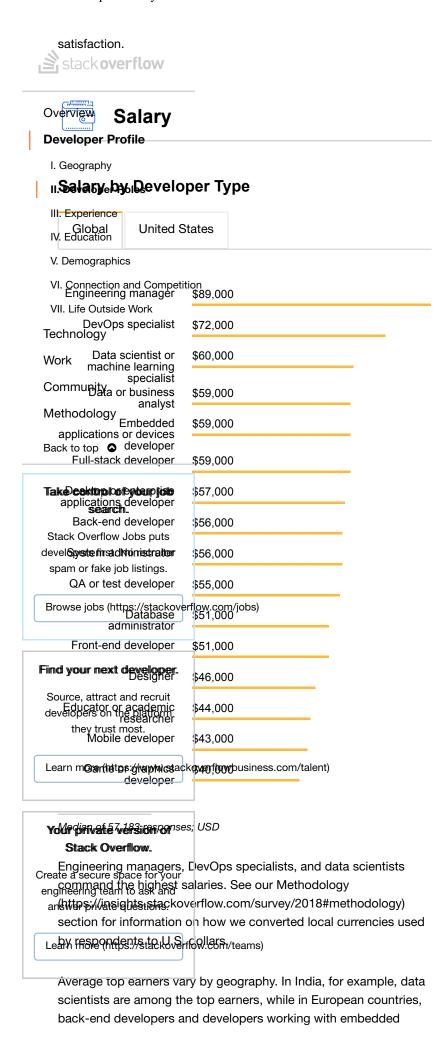
#### **Version Control**

Learn more (https://www.stackoverflowbusiness.com/talent)
All Respondents Professional Developers





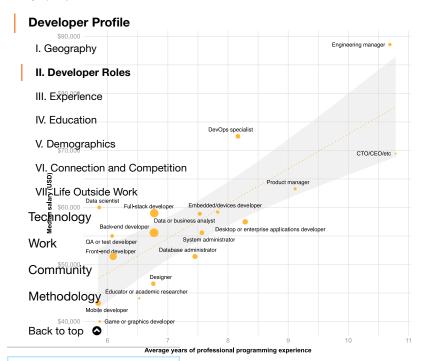
Developers who check in code the most often also have higher job



devices are among the top earners.

stackoverflow

# Salary and Experience by Developer Type Overview



Take control of goode is bearch.

Stack Overflow Jobs puts
Naturally, developers with more years of experience are paid more.

developers first. No recruiter
However, we also see that some type of coding work is paid more spam or take job listings.

highly at the same level of experience. Data scientists and DevOps

specialists are high earners for their level of experience. Browse jobs (https://stackoverflow.com/jobs)

## Salary and Experience by Language

Find your next developer.

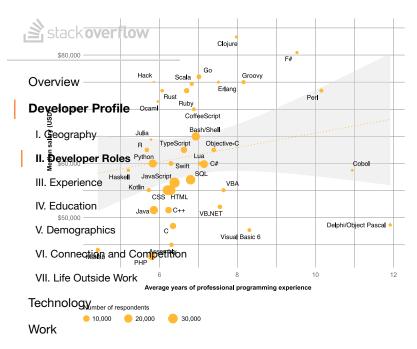
Source, attract and recruit developers on the platform they trust most.

Learn more (https://www.stackoverflowbusiness.com/talent)

#### Your private version of Stack Overflow.

Create a secure space for your engineering team to ask and answer private questions.

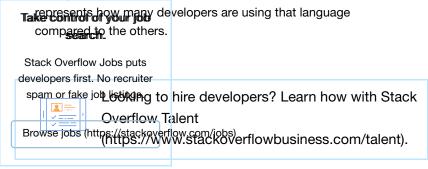
Learn more (https://stackoverflow.com/teams)



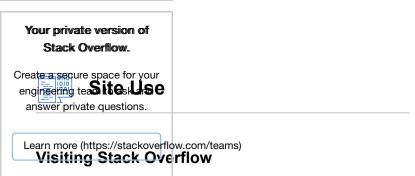
Community
Developers using languages that appear above the line in this

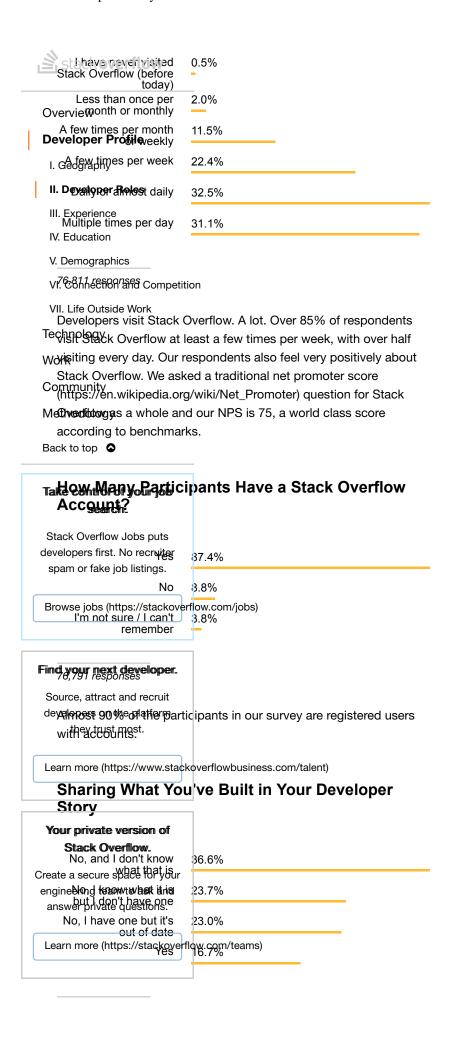
Methodology as Go, Clojure, and F#, are being paid more even given
how much experience they have. Developers using languages

Backeloweth ine, like PHP and Visual Basic 6, however, are paid less
even given years of experience. The size of the circles in this chart











Almost 40% of respondents have a Developer Story here on Stack Overflow. You can create your own Developer Story Overview (https://stackoverflow.com/users/story/join?utm\_source=so-

DeveloperuProfiteedium=site&utm\_campaign=dev-survey-2018-

promotion) to show off what you've built. I. Geography

#### II. Developer Roles

V. Demographics

#### **⊞Hawi** Often Do Developers Participate on Stack "Qyerflow?

VI. Connection AY @ OSYPFetition 7.3% participated in Q&A on VII. Life Ostack Wyrrflow Less than once per 39.2% Technologyth or monthly

A few times per month 22.6% or weekly

Community A few times per week 11.7%

Meth Daily ogyalmost daily 5.9%

Back to top times per day 3.2%

# Take control of your job 65,740 responses search.

Stack Overflow only to find answers to developers first No recruiter their questions, while others participate in the community by spam or fake job listings.
asking, answering, voting for, or commenting on questions. Over 40% of survey respondents participate on Stack Overflow a few Browse jobs (https://stackoverflow.com/jobs) times per month or more often. Interested in a place for you and

your technical team to ask and answer questions in a secure environment? Learn more about Stack Overflow for Teams

Findhytpus: //letatodewelopen.com/teams).

Source, attract and recruit developers on the platform they trust most.

# **Developer Opinions on Ads**

Learn more (https://www.stackoverflowbusiness.com/talent)

## How Do Developers Feel About Ads?

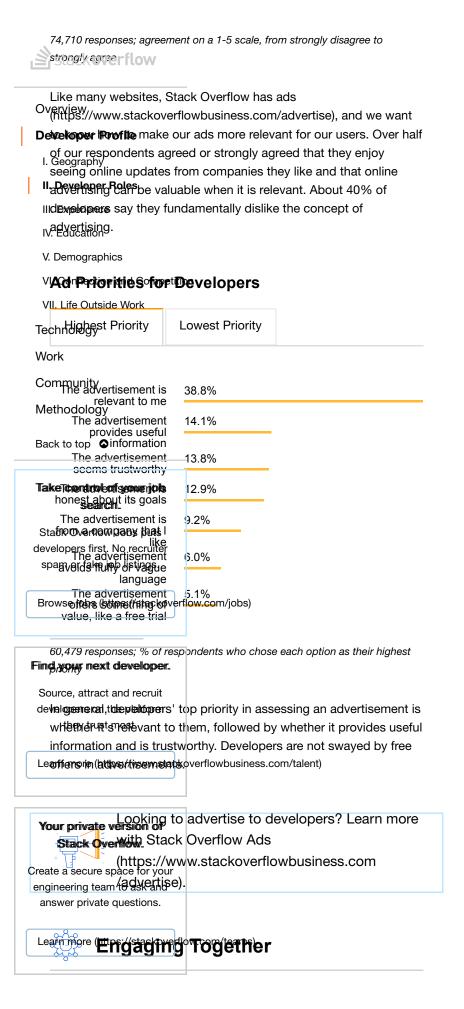
#### Your private version of Stack Overflow.

I enjoy seeing online Create a secureus potate s of royonur engineempanies that k like Online advertising can answer be valuable when it is relevant to me

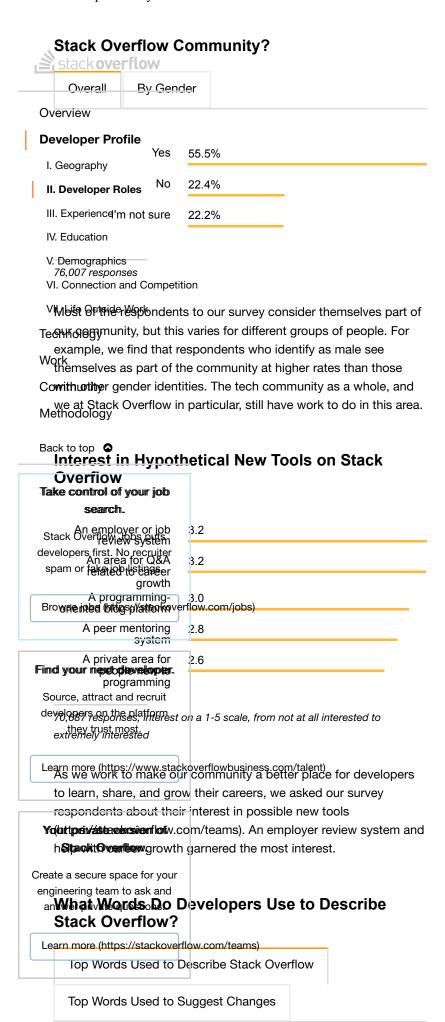
3.3

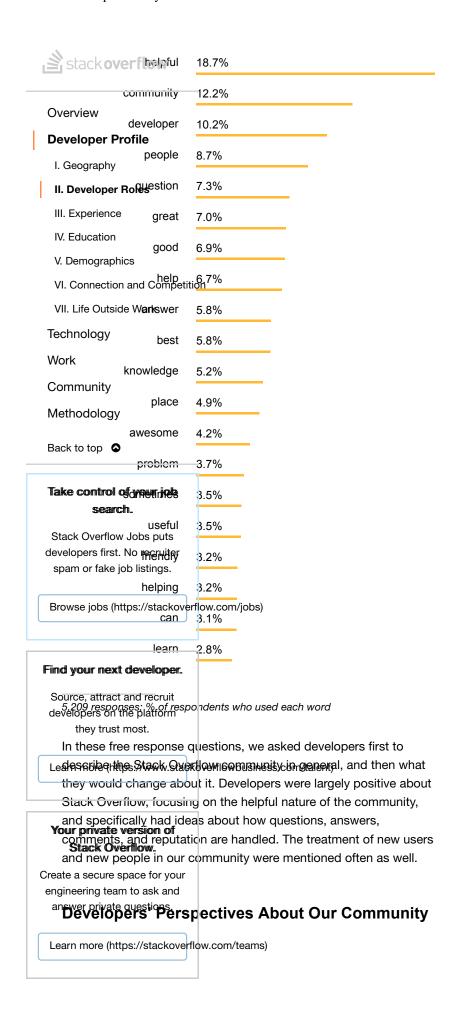
I fundamentally dislike Learn more (https://stackgyerflow.com/teams)

advertising



#### Do Developers Consider Themselves Part of the







Methodology

Back to top This year, our survey included questions about what developers think the best, worst, most annoying, and most exciting things Take SOUTH OF SOUTH OF ARE. (These questions were randomized so that each respondent got one positive and one negative version.) In Stack positive yersions of these questions, respondents were more devikely soits like beartithe wealth of sharing and collaboration on our spate of althein telepholical transfer of the control of the contr

interactions they've witnessed, downvotes, and handling of

Broduselijoate(https://istaskoverflow.com/jobs)

Looking for a place for you and your technical team to ask and Find your next descripped ons in a secure environment? Learn more about Stack Overflow for Teams (https://stackoverflow.com/teams). Source, attract and recruit on-premise or private cloud version? Check out Stack developers on the platform Overflow Enterprise (https://www.stackoverflowbusiness.com they trust most. /enterprise).

Learn more (https://www.stackoverflowbusiness.com/talent)

Methodology

Your private version of Stack Overflow.

How we planned and analyzed our

Create a secure space for your Survey engineering team to ask and answer private questions.

Learning port is based or most even of 191,592 software developers from 183 countries around the world. This number of responses are what we consider "qualified" for analytical purposes based on completion and time spent on the survey; another approximately 20,000 responses were started but not included in the analysis

because respondents did not answer enough questions. Of the qualified responses, 67,441 (66.4%) completed the entire survey.

# Qualified Responses Worldwide Overview

Develloper Profile	39,001
I. Geograph America	25,016
II. Developer Roles Asia III. Experience	24,700
IV. ESROuth America	4,162
V. Degraphics	2,869
VI. Connection and Competition Australia/Oceania VII. Life Outside Work	2,591
Other (country not listed) Technology	84

#### Work

Communitive survey was fielded from January 8 to January 28.

• The median time spent on the survey for qualified responses Methodology was 25.8 minutes, and the median time for those who finished the entire survey was 29.4 minutes.

• Respondents were recruited primarily through channels

owned by Stack Cverflow. The top 5 sources of respondents

Take control by Stack Cverflow. The top 5 sources of respondents

mail lists, house ads, blog posts, and

stack Cverflow Jobs puts

engaged users on Stack Overflow were more likely to notice

Stack Overflow Jobs puts

developers first. No recruiter

spam or take of his blogs the survey and click to begin it. Respondents

a motivation to complete the survey.

We treated responses as qualified for analysis if the user Browse jobs (https://stackdverflow.com/jobs) spent a certain amount of time relative to how far they got into the survey. Most survey responses that spent less than 5 minutes were excluded from the final sample.

Find your Wext develops on cents about their salary. First, we asked what currency each respondent typically used. Then we Source, attract and recruit asked that respondent what their salary was in that currency, developers on the platform and whether that salary was weekly, monthly, or yearly.

• For a short time on the first day, there was a bug that left out the last part of the question (weekly vs. Learn more (https://www.stackoverflowbusiness.com/talent) monthly vs. yearly); those salary responses are not included here.

\*\*We converted salaries from user currencies to USD

\*\*Your private versing the exchange rate on 2018-01-18, and also

\*\*Stack Overnous\*\* Stack Overnous\*\* Stack Overnous\*\* To working weeks.

Create a secure space for your control of This question, like most on the survey, was optional.

engineering team to ask and There were 58,650 respondents (57.7% of qualified answer private questions. respondents) who gave us salary data.

• The top approximately 1% of salaries inside and
Learn more (https://stackoverfipw.com/teams)
outside of the US were trimmed and replaced with
threshold values. The threshold values for inside and
outside the US were different.

• Many questions were only shown to respondents based on

their previous answers. For example, questions about jobs stacland work were only shown to those who said they were working in a job.

- The questions were organized into several blocks of Overviewquestions, which were randomized in order. Also, the
- answers to most questions were randomized in order. **Developer Profile** Due to an error, Oracle and SQLite were excluded from the
- I. Geographiestion about databases for the first day of the survey. We
- II. Developer holes examined whether the results for the other databases changed from the first day compared to the rest
- III. Experience of the survey fielding period and they did not. The results
- IV. Education wn here for database use and most loved/dreaded
- V. Demographics / V. Demographics SQLite were added to the possible answers.
- VI. Connection and Competition.

   On 2018-3-19, we made some edits to this site based on
- VII. Life Occasional Ministry feedback to address two issues: a) how we

handled the responses of transgender developers, to avoid Technology

gy implying that being a transgender man or woman is a Work separate gender and b) a higher level of clarity throughout

the discussion about our survey sample and its limitations.

Methodology

Back to this







#### Take control of your job

Built with vsearch c# (https://stackoverflow.com/questions/tagged (https://stackoverflow.com/questions/tagged /c%23?sort=frequent) iQuery (https://stackoverflow.com/questions/tagged /iguery?sort=frequent) font-awesome /font-awesome?sort=frequent) bootstrap (https://stackoverflow.com/questions /tagged/twitter-bootstrap?sort=frequent) unicorn tears (https://meta.stackexchange.com/questions/19478/the-many-memes-ofmBrawsa john (https://stackoverflow.com/jobs)

#### Find your next developer.

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