Statistical and Software Needs at NYU

In the Spring of 2020, the Data Sciences and Software Services (DS3) group at NYU distributed a survey to assess the current needs and use of statisticians and software engineers across the university. As to date, 27 participants have responded representing affiliations with 21 schools or centers across the university.

Statistical Methodology Results

With regards to statistical needs, respondents indicated that they needed assistance with 9 areas of statistics. The following table displays these areas along with the number of respondents who indicated this need.

Table 1: Statistical Methodology in Need

Statistical Methodology	N
Data Visualization	11
Preparing The Raw Data For Analysis	10
Model Interpretation	9
Preparation Of Statistical Grant Materials	9
Coding/Software Help	5
Model Selection And Specification	4
Research Design	4
Other	1
Simulation	1

In order to better understand the extent of these needs, respondents were asked to indicate the number of full time equivalent (FTE) personnel that they could currently support, and the number they needed to satisfy their research needs across their projects. The following table presents the research needs we observed. Therefore, we observed that among our sample of 27 respondents, a total of 60.9% of needs were currently met.

Table 2: Gap Between Statistical FTE Needed and FTE Supported

FTE Needed	FTE Supported	Needs & Supports Gap	% of Needs Supported
16	9.75	6.25	60.9%

The following two tables display respondents opinions on their ability to support their statistical methodology needs through their grants, and whether they would feel comfortable contracting statistical services from a university pool. Of 27 participants in the survey, 16 indicated that they needed help supporting or locating skilled individuals to meet their statistical needs.

Table 3: Supporting Statistical Methodology Needs Through Grants

Opinion	N
I don't need to hire anyone to help with statistical methodology	3
It is usually possible for me to hire the personnel needed to satisfy my needs through grants on my own.	4
I would usually be able to support the level of effort that I need through grants, but it is difficult to hire skilled people given the duration of contracts and/or level of effort I require.	7
Usually I can only partially support the level of effort that I need through grants (even if hiring wasn't an obstacle).	6
It is unlikely that I could support any of my needs through grants.	3

Similarly, the next table shows that 15 respondents indicated interest in contracting a statistical methodologist through a university pool.

Table 4: Contracting Statistical Methodology Services From a University Pool

Opinion	N
I do not need any of these services.	3
I am skeptical of an arrangement where I didn't hire the person myself.	5
I would consider contracting such services as long as there is someone that is a good fit for my needs.	12
I would be happy to contract these services through a university pool.	3

When asked about how they currently access statistical methodology help, 8 respondents indicated that they currently seek consultation from outside the university. Furthermore, 12 respondents indicated that the reason they needed help with statistical methodology was to implement innovative methods that could help push forward their research in ways they currently were unable to do themselves.

Software Engineering Results

A similar investigation of needs pertaining to Software Engineering was conducted. Respondents indicated that they needed assistance with 8 areas of software engineering. The following table displays these areas along with the number of respondents who indicated this need.

Table 5: Software Engineering in Need

Software Engineering	N
Containerization And Cloud Computing	9
Mechanical Turk	9
Python Or R Package Building	7
Database	5
Software Refactoring	5
Web Development	5
Web Front-end	4
Spark & Hadoop	1

In order to better understand the extent of these needs, respondents were asked to indicate the number of FTE personnel that they could currently support, and the number they needed to satisfy their research needs across their projects. The following table presents the research needs we observed. Therefore, we observed that among our sample of 27 respondents, a total of 90.6% of needs were currently met.

Table 6: Gap Between Software FTE Needed and FTE Supported

FTE Needed	FTE Supported	Needs & Supports Gap	% of Needs Supported
13.25	12	1.25	90.6%

The following two tables display respondents opinions on their ability to support their software engineering needs through their grants, and whether they would feel comfortable contracting such services from a university pool. Of 27 participants in the survey, 12 indicated that they needed help supporting or locating skilled individuals to meet their software needs.

Table 7: Supporting Software Engineering Needs Through Grants

Opinion	N
I don't need to hire anyone to help with software engineering	2
It is usually possible for me to hire the personnel needed to satisfy my needs through grants on my own.	9
I would usually be able to support the level of effort that I need through grants, but it is difficult to hire skilled people given the duration of contracts and/or level of effort I require.	5
Usually I can only partially support the level of effort that I need through grants (even if hiring wasn't an obstacle).	4
It is unlikely that I could support any of my needs through grants.	3

Similarly, the next table shows that 13 respondents indicated interest in contracting a software engineer through a university pool.

Table 8: Contracting software engineering services from a university pool

Opinion	N
I do not need any of these services.	3
I am skeptical of an arrangement where I didn't hire the person myself.	7
I would consider contracting such services as long as there is someone that is a good fit for my needs.	8
I would be happy to contract these services through a university pool	5

When asked about how they currently access software engineering help, respondents indicated that they currently seek consultation from outside the university. The places from where these consultations were solicited included hiring independent developers. Furthermore, 12 respondents indicated that the reason they needed help with software engineering was to implement innovative methods that could help push forward their research in ways they currently were unable to do themselves.

Testimonials

"This is a decoy comment."