

April 2024

Supply and Demand for Information Technology Jobs, in Selected Mississippi Regions

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NATIONAL STRATEGIC
PLANNING & ANALYSIS
RESEARCH CENTER

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Mississippi's State Longitudinal Data System (SLDS) is one of the most comprehensive systems in the country and includes administrative records from more than 25 education, workforce, and human service agencies in the state. The SLDS allows for the alignment of multiple sources of de-identified administrative data over time to evaluate educational or workforce strategies in terms of real outcomes, such as entrance into employment, wages, and skill gains.

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OVERVIEW

PROJECT REQUEST

An analysis was requested by Mississippi State University (MSU) Office of Research and Economic Development (ORED) to provide information pertaining to the current and expected demand for select information technology (IT) jobs, and the pipeline of Mississippi university graduates with degrees in fields related to these jobs.

The requested region of interest for this analysis includes all Mississippi counties north of Interstate 20 (I-20). For comparison, this report also includes information on the remaining counties in Mississippi (those south of I-20), and for the nation as a whole. Information is provided for the years 2019 through 2023.

KEY FINDINGS

This report identified the following key findings for supply and demand in IT-related jobs between 2019 and 2023:

1. Employment in IT-related jobs has decreased by 2.5% in the Mississippi counties north of I-20. This is a smaller decrease than observed in the counties south of I-20. At a national level, employment in these jobs increased by 8.9%.
2. In 2023, the top IT occupations for north Mississippi counties include *Computer User Support Specialists* (1,620) and *Software Developers* (1,559). Fastest growing specialties include *Information Security Analysts* (29.5%) and *Computer Hardware Engineers* (28.3%)
3. The annual number of job openings for IT-related jobs has decreased by 212 during the observed time period, or 24.7%. Job openings in Mississippi counties south of I-20 decreased by about the same magnitude (250), which is a 42.3% change. At a national level, the number of job openings increased by nearly 40 thousand, or 8.5%.
4. In 2023, the occupations with the most job postings include *Software Developers* (140) and *Computer User Support Specialists* (131).
5. The annual number of graduates with IT-related degrees residing in counties north of I-20 has trended upward from 128 graduates in 2019 to 168 graduates in 2023, totaling 740 graduates over the past 5 years. In the counties south of I-20, graduation levels are remaining relatively stable at about 100 per year, totaling 480 over the past 5 years.
6. The majority of graduates residing in north Mississippi counties earned degrees in either *Computer and Information Sciences* (about 110 per year) or in *Computer Engineering* (about 32 per year).

METHODOLOGY

DATA

The data for this study were made available by the continued funding of Mississippi's State Longitudinal Data System (SLDS) through the state legislature. The SLDS includes administrative records from over 25 state agencies. Data from the following SLDS data contributors were used:

Mississippi Public Universities – Data on 4-year public university graduates are contributed to the SLDS by Mississippi's eight public universities and the Institutions for Higher Learning (IHL). These data include information on enrollment, county of residence, academic major, and graduation.

Data from Mississippi's SLDS were also supplemented by employment information from Lightcast, which compiles and integrates labor market data from government and private-sector sources, including detailed county-level employment estimates.

IDENTIFYING IT-RELATED OCCUPATIONS AND DEGREE PROGRAMS

IT-related occupations were identified using the Standard Occupational Classification (SOC) System, which is the job classification standard used by the U.S. Bureau of Labor Statistics.

Relevant degree programs offered through Mississippi's public university were selected by aligning each selected occupation to a Classification of Instructional Programs (CIP) code. A crosswalk aligning SOC and CIP codes is published by the U.S. Department of Education's National Center for Education Statistics.

INDICATORS

Employment - The estimated annual number employed in IT-related jobs in the Mississippi counties north of I-20, south of I-20, and the nationwide from 2019-2023.

Job Opening - The estimated annual number of job openings in IT-related jobs in the Mississippi counties north of I-20, south of I-20, and the nationwide from 2019-2023.

Graduates. The annual number of graduates from Mississippi public universities whose residence county was north of I-20 or south of I-20 with an IT-related degree from 2019-2023.

DATA SUPPRESSION

In accordance with SLDS Rules and Regulations, numeric values less than 10 are suppressed along with the accompanying percentages. These suppressed values are replaced with the "<10" symbol, and the accompanying percent is replaced with the "---" symbol.

RESULTS

On the following pages, Tables 1-3 provides information on employment, job openings, and graduates related to IT occupations during the years 2019-2023.

**TABLE 1: EMPLOYMENT IN SELECT IT-RELATED JOBS,
BY GEOGRAPHICAL LOCATION (NORTH OR SOUTH OF I-20) AND NATIONWIDE**

SOC	Occupation Title	Employment					Percent Change 2019-2023
		2019	2020	2021	2022	2023	
North of I-20							
Information Technology (IT)		8,961	8,846	8,604	8,675	8,734	-2.5%
15-1211	Computer Systems Analysts	1,384	1,380	1,244	1,146	1,155	-16.5%
15-1212	Information Security Analysts	315	364	411	406	408	29.5%
15-1221	Computer and Information Research Scientists	206	212	203	141	142	-31.1%
15-1231	Computer Network Support Specialists	673	647	640	603	593	-11.9%
15-1232	Computer User Support Specialists	1,587	1,531	1,564	1,620	1,620	2.1%
15-1241	Computer Network Architects	233	251	246	254	252	8.2%
15-1242	Database Administrators	184	190	187	163	168	-8.7%
15-1243	Database Architects	61	58	59	80	76	24.6%
15-1244	Network and Computer Systems Administrators	1,010	1,022	989	1,016	1,012	0.2%
15-1251	Computer Programmers	536	472	361	311	302	-43.7%
15-1252	Software Developers	1,317	1,364	1,356	1,502	1,559	18.4%
15-1253	Software Quality Assurance Analysts and Testers	243	225	212	224	226	-7.0%
15-1254	Web Developers	150	141	146	151	151	0.7%
15-1255	Web and Digital Interface Designers	180	175	148	179	181	0.6%
15-1299	Computer Occupations, All Other	769	697	703	729	744	-3.3%
17-2061	Computer Hardware Engineers	113	117	135	150	145	28.3%
South of I-20							
Information Technology (IT)		4,613	4,671	4,404	4,298	4,421	-4.2%
15-1211	Computer Systems Analysts	634	619	518	440	451	-28.9%
15-1212	Information Security Analysts	153	187	209	204	208	35.9%
15-1221	Computer and Information Research Scientists	180	180	163	145	152	-15.6%
15-1231	Computer Network Support Specialists	316	299	238	232	234	-25.9%
15-1232	Computer User Support Specialists	872	896	850	861	874	0.2%
15-1241	Computer Network Architects	108	123	105	118	124	14.8%
15-1242	Database Administrators	103	107	102	73	75	-27.2%
15-1243	Database Architects	27	23	24	3	3	-88.9%
15-1244	Network and Computer Systems Administrators	447	425	404	421	425	-4.9%
15-1251	Computer Programmers	257	236	143	129	130	-49.4%
15-1252	Software Developers	643	690	708	727	775	20.5%
15-1253	Software Quality Assurance Analysts and Testers	132	155	188	206	214	62.1%
15-1254	Web Developers	44	42	38	23	25	-43.2%
15-1255	Web and Digital Interface Designers	54	55	58	63	65	20.4%
15-1299	Computer Occupations, All Other	594	602	632	647	660	11.1%
17-2061	Computer Hardware Engineers	49	32	24	6	6	-87.8%
Nationwide							
Information Technology (IT)		4,763,659	4,737,929	4,836,597	5,106,872	5,186,363	8.9%
15-1211	Computer Systems Analysts	623,844	603,219	537,471	535,552	541,760	-13.2%
15-1212	Information Security Analysts	135,770	149,025	171,985	178,128	184,002	35.5%
15-1221	Computer and Information Research Scientists	33,991	33,368	34,129	38,061	39,037	14.8%
15-1231	Computer Network Support Specialists	195,846	193,886	188,111	179,356	180,972	-7.6%
15-1232	Computer User Support Specialists	702,547	686,912	714,206	749,975	755,140	7.5%
15-1241	Computer Network Architects	159,278	165,211	177,162	181,322	181,732	14.1%
15-1242	Database Administrators	82,256	86,674	89,584	83,536	84,397	2.6%
15-1243	Database Architects	47,518	50,276	51,886	64,483	64,977	36.7%
15-1244	Network and Computer Systems Administrators	375,233	358,001	337,878	345,046	347,145	-7.5%
15-1251	Computer Programmers	218,857	192,929	169,757	151,382	149,648	-31.6%
15-1252	Software Developers	1,306,434	1,356,308	1,451,584	1,619,225	1,662,003	27.2%
15-1253	Software Quality Assurance Analysts and Testers	178,201	184,256	197,003	202,209	205,825	15.5%
15-1254	Web Developers	89,932	94,406	101,594	102,812	104,678	16.4%
15-1255	Web and Digital Interface Designers	90,694	96,431	102,915	114,873	116,827	28.8%
15-1299	Computer Occupations, All Other	450,706	418,562	431,978	480,432	486,789	8.0%
17-2061	Computer Hardware Engineers	72,552	68,465	79,354	80,480	81,431	12.2%

Source: Lightcast, 2024

**TABLE 2: JOB OPENINGS IN SELECT IT-RELATED JOBS,
BY GEOGRAPHICAL LOCATION (NORTH OR SOUTH OF I-20) AND NATIONWIDE**

SOC	Occupation Title	Job Opening					Percent Change 2019-2023
		2019	2020	2021	2022	2023	
North of I-20							
Information Technology (IT)		858	857	1,144	614	646	-24.7%
15-1211	Computer Systems Analysts	118	87	84	83	86	-27.1%
15-1212	Information Security Analysts	73	73	35	24	30	-58.9%
15-1221	Computer and Information Research Scientists	29	19	16	9	10	-65.5%
15-1231	Computer Network Support Specialists	56	79	57	41	41	-26.8%
15-1232	Computer User Support Specialists	125	162	225	121	131	4.8%
15-1241	Computer Network Architects	40	28	34	13	13	-67.5%
15-1242	Database Administrators	15	14	11	9	8	-46.7%
15-1243	Database Architects	7	8	24	5	5	-28.6%
15-1244	Network and Computer Systems Administrators	88	64	117	60	61	-30.7%
15-1251	Computer Programmers	41	27	28	15	16	-61.0%
15-1252	Software Developers	146	116	244	132	140	-4.1%
15-1253	Software Quality Assurance Analysts and Testers	23	27	50	18	17	-26.1%
15-1254	Web Developers	10	19	19	7	9	-10.0%
15-1255	Web and Digital Interface Designers	13	12	47	13	13	0.0%
15-1299	Computer Occupations, All Other	52	79	105	56	56	7.7%
17-2061	Computer Hardware Engineers	22	43	48	8	10	-54.5%
South of I-20							
Information Technology (IT)		591	443	576	359	341	-42.3%
15-1211	Computer Systems Analysts	69	35	40	34	34	-50.7%
15-1212	Information Security Analysts	48	46	21	15	16	-66.7%
15-1221	Computer and Information Research Scientists	15	10	27	14	12	-20.0%
15-1231	Computer Network Support Specialists	36	21	29	14	18	-50.0%
15-1232	Computer User Support Specialists	116	76	105	72	70	-39.7%
15-1241	Computer Network Architects	22	14	23	9	8	-63.6%
15-1242	Database Administrators	13	5	7	3	4	-69.2%
15-1243	Database Architects	3	3	0	0	0	-100.0%
15-1244	Network and Computer Systems Administrators	37	27	61	26	27	-27.0%
15-1251	Computer Programmers	25	13	14	8	7	-72.0%
15-1252	Software Developers	101	65	101	88	72	-28.7%
15-1253	Software Quality Assurance Analysts and Testers	37	41	46	18	17	-54.1%
15-1254	Web Developers	5	2	4	0	0	-100.0%
15-1255	Web and Digital Interface Designers	10	10	18	5	4	-60.0%
15-1299	Computer Occupations, All Other	51	73	78	53	51	0.0%
17-2061	Computer Hardware Engineers	3	2	2	0	1	-66.7%
Nationwide							
Information Technology (IT)		444,550	577,094	691,651	397,227	482,314	8.5%
15-1211	Computer Systems Analysts	45,425	38,919	52,706	39,465	47,013	3.5%
15-1212	Information Security Analysts	22,283	33,200	22,080	16,602	19,805	-11.1%
15-1221	Computer and Information Research Scientists	4,101	5,498	7,732	3,460	4,090	-0.3%
15-1231	Computer Network Support Specialists	20,366	21,075	18,622	14,355	16,308	-19.9%
15-1232	Computer User Support Specialists	59,946	85,503	91,619	58,551	68,546	14.3%
15-1241	Computer Network Architects	17,642	23,846	19,329	11,451	13,676	-22.5%
15-1242	Database Administrators	10,501	10,882	7,185	5,956	6,982	-33.5%
15-1243	Database Architects	6,588	7,122	17,503	4,643	5,897	-10.5%
15-1244	Network and Computer Systems Administrators	26,183	26,129	33,105	22,754	26,474	1.1%
15-1251	Computer Programmers	15,701	16,096	14,913	9,993	11,172	-28.8%
15-1252	Software Developers	129,385	179,980	250,682	130,898	167,876	29.7%
15-1253	Software Quality Assurance Analysts and Testers	19,760	27,506	24,899	16,672	21,470	8.7%
15-1254	Web Developers	11,678	15,307	14,643	8,446	10,196	-12.7%
15-1255	Web and Digital Interface Designers	13,653	15,940	25,613	10,424	12,342	-9.6%
15-1299	Computer Occupations, All Other	34,450	52,606	79,382	37,918	43,933	27.5%
17-2061	Computer Hardware Engineers	6,888	17,485	11,638	5,639	6,534	-5.1%

Source: Lightcast, 2024

**TABLE 3: GRADUATES FROM MISSISSIPPI PUBLIC UNIVERSITIES
WITH IT-RELATED DEGREES, BY GEOGRAPHICAL LOCATION (NORTH OR SOUTH OF I-20)**

CIP	Program Title	Graduates					Total
		2019	2020	2021	2022	2023	
North of I-20							
	Information Technology (IT)	128	141	157	148	166	740
	Computer and Information Sciences	95	102	128	105	127	557
	Data Processing and Data Processing Tech.	<10	<10	<10	<10	<10	25
	Computer Engineering	28	34	26	35	35	158
South of I-20							
	Information Technology (IT)	97	82	104	104	93	480
	Computer and Information Sciences,	64	50	64	70	60	308
	Data Processing and Data Processing Tech.	28	24	21	23	20	116
	Computer Engineering, General	<10	<10	19	11	13	56
	Statewide Total	225	223	261	252	259	1,220

Source: Mississippi State Longitudinal Data System, 2024.



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